The Magazine of

STANDARDS

Lamp standards contribute to good lighting (report on lamp project, page 142)

May 1955

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In This Issue

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MARGINAL NOTES

The ABC Conference—

The American-British-Canadian conference for unification of standards, held in New York April 11-15, could have been called an "American-British Commonwealth" conference. For the first time at any such meeting, representatives of India, Pakistan, Australia, New Zealand, and South Africa joined delegates from the United Kingdom, Canada, and the USA.

The delegates met in New York to discuss further unification of screw threads, bolts and nuts, and surface finish practices. Some of the questions covered extension of the Unified Standard to smaller sizes of screw threads than had been agreed upon in the past; extension of the Unified Fine series to sizes larger than 1½ inches; a proposed Unified Standard on Acme threads; and a possible extension of the Unified Heavy series to bolts and nuts below ½ inch. Differences in screw thread gaging practices were discussed; and preliminary consideration was given to general principles of gaging (not limited to screw threads). English terminology, including abbreviations and symbols, and unification of miniature bearings were also given general discussion.

The first ABC Conference on Engineering Standards was held in 1943 and similar meetings have been held every three years since that time. The present conference was called by the American Standards Association at the request of Dr Arthur Flemming, Director of Defense Mobilization. It was carried on under the sponsorship of The American Society of Mechanical Engineers.

A summary report of the results will be published soon in THE MAGAZINE OF STANDARDS.

A Twenty-fifth Anniversary—

It was only 25 years ago, on August 1, 1930, that the first photoflash bulb was introduced in this country. This year, half a billion flashbulbs—nearly a quarter of all

electric light sources produced—are being made in the USA alone. As many present-day photographers remember, before the development of flashbulbs flash photography was produced by igniting flash powder on metal trays. This resulted in smoke, odor, noise, and danger of fire, not to mention inability to control the amount of light accurately.

It is appropriate that articles in this issue (pages 133 and 135) discuss the standards that help assure uniform good performance on the part of the dry cells and batteries that spark this country's half billion flashbulbs. Of course, the standard applies to cells and batteries for many other uses, too—for portable radios, flashlights, hearing aids, and many others.

How To Protect Children—

The paint manufacturers, insurance companies, and medical groups are to be congratulated on the sound and sensible solution they have agreed upon for protecting children against paint poisoning (see ad, back cover). In 1951-53, lead poisoning caused the deaths of 94 children under 5 years of age in only four cities—New York, Chicago, St. Louis, and Baltimore. Last year, 165 cases of lead poisoning were reported to the health departments of these same cities.

Recognizing that it is humanly impossible to prevent a small child from chewing anything within reach, the groups represented on Sectional Committee Z66 have agreed on limiting toxic substances in a special purpose paint that will be safe for surfaces with which small children have frequent contact. Dr A. G. Cranch, consulting toxicologist, Union Carbide and Carbon Corporation, New York, was chairman of the subcommittee that prepared the standard. Paint manufacturing companies, the Lead Industries Association, the New York Paint, Varnish, and Lacquer Association, the New York State and New York City Departments of Health, and the American Academy of Pediatrics were represented on the committee.

This Month's Standards Personality

Eliot V. Parker

Eliot V. Parker is the newly appointed Chief of the Safety Division of the U.S. Department of Labor's Bureau of Labor Standards. ASA's Safety Standards Board is also fortunate in having him as a new member representing the Bureau. In both capacities, Eliot Parker will have an important role in providing safety standards for the protection of the country's industrial employees.

It was under Eliot Parker's direction that the safety programs of the United States Army were conducted during the last 14 years.

As chief of the Bureau he will supervise the Bureau's work in devising and promoting safety programs in industry, conducting safety training courses, and providing the secretariat for both the Federal Safety Council and the President's Conference on Occupational Safety. His Army work gives him a splendid background for this responsibility. He had been a safety expert with the Travelers Insurance Company before he was loaned to the Quartermaster General during the war. Everyone recalls the highly successful wartime plant production program, and the safety procedures which helped to prevent delays in the production and delivery of essential materials. Eliot Parker organized and supervised those wartime plant production programs.

So successful was he that he was invited to become the civilian Safety Director for the War Department. In 1946 he was assigned to the Office of the Chief of Staff and Supervising Safety Engineer of the United States Army. The safety programs he conducted were considered by many to be the most comprehensive and effective safety programs in the nation. Their success was recognized by the nation's safety experts and he was given several Awards of Honor by the National Safety Council.

During his wartime activities, Eliot Parker even found time to take part in the work of the American War Committee that developed Performance Requirements for Protective Occupational Footwear. He served as a representative of the U.S. Army.

As a member of the Safety Standards Board he will have a part in deciding policies on initiation of safety projects and on approval of American Safety Standards.

Of course, Eliot Parker is a member of the American Society of Safety Engineers. He is author of many publications on safety issued by the Army and by the Travelers Insurance Company.

His home is in Alexandria, Virginia.

The Front Cover

On of the modern ways of lighting classrooms for easy maintenance and good seeing comfort. The work on standard dimensions and electrical performance of lamps is described on page 142. Photo courtesy General Electric.

DRY CELLS

Improvements in dry cells and batteries are reflected in the new edition of American Standard C18.1-1954. Special tests for flashlight batteries are also included for the first time. Below, right, John P. Schrodt with some of the circuits and equipment used at the National Bureau of Standards to test hearing aid batteries and flashlight cells.

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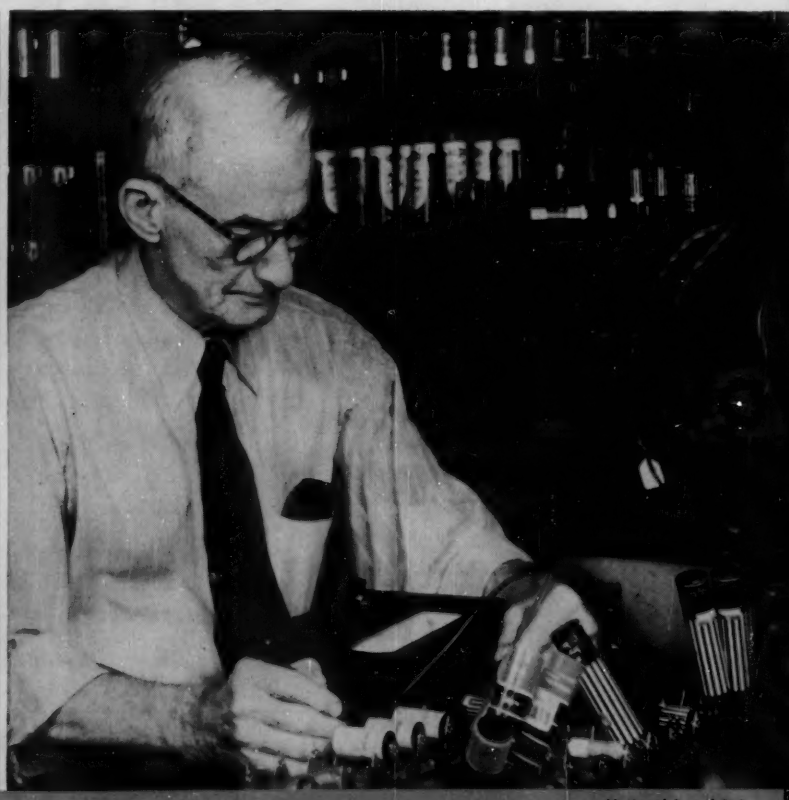

National Bur of Stds

STANDARD BROADENED—

Now Includes Mercury, Air, and Flat Type Cells

By JOHN P. SCHRODT *and* WALTER J. HAMER

The nationally recognized American Standard for Dry Cells and Batteries, now revised, is used widely as reference in industry and research institutes. It is based on tests carried on in the laboratories of the National Bureau of Standards.

The standard has now gone into its sixth edition and fifth revision. Identified as American Standard C18.1-1954, it is contained in Circular 559 of the National Bureau of Standards and is available from the Superintendent of Documents, Government Printing Office, Washington, D.C., as well as from the American Standards Association, at 25 cents.

This specification, prepared by ASA Sectional Committee C18, under the sponsorship of the National Bureau of Standards, was first issued in 1928 and was revised in 1930, 1937, 1941, and 1947.

FROM its inception in 1928 to the present time the American Standard Specification for Dry Cells and Batteries has been based on comprehensive and annual (war years excepted) tests in the laboratories of the National Bureau of Standards. In these tests dry cells and batteries are used which are received periodically from manufacturers who produce the bulk of dry cells and batteries sold in this country. In this endeavor the ASA Sectional Committee C18 has maintained close cooperation with those responsible for the Federal Specifications with the result that the Federal Specifications issued from 1931 to the present time have been concordant with the American Standard Specification.

The several revisions of the American Standard Specification for Dry Cells and Batteries have all pertained to the Leclanché type dry cell made with a "depolarizer" of manganese dioxide. They have covered for the most part (a) standard cell sizes and designations, (b) group batteries with dimensions, arrangements, and terminals, (c) standard test methods, and (d) performance requirements. Although previous revisions have shown the vast improvement in the quality or performance of dry cells and the steady change in applications and test methods, the present revision marks the first major revision since 1928 when the specification was first issued. It is indicative of the advances in dry cells and batteries which will be forthcoming.

The new specification is not restricted to Leclanché dry cells but includes specifications for the so-called "mercury cells," the "air-depolarized" cells, and flat cells which have been developed and manufactured during the past few years.

The mercury cells were developed and manufactured during World War II for military service and are now available to the public principally for use in hearing-aid instruments. These cells are alkaline cells which utilize an aqueous solution of potassium hydroxide and electrodes of zinc and mercuric oxide (depolarizer) mixed with a small amount (about 5 percent) of graphite. They operate with an efficiency of about 85 percent, the nominal capacity being about 0.2 ampere hour per gram of depolarizer. Several standard sizes and types are covered by the new American Standard specification together with nominal dimensions and performance requirements. These cells are designated by the capital letter, M, for mercury.

The "air-depolarized" cells, dating from before World War II, have been designed especially in small sizes for hearing-aid instruments and are listed in the specification as equivalent in size and electrical capacity to some of the Leclanché and mercury cells. Instead of chemical depolarizers these cells utilize air from the atmosphere for depolarizing action.

Another type of cell construction

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John P. Schrodt, formerly an electrical engineer of the National Bureau of Standards, was chairman of the Sectional Committee on Dry Cells and Batteries, C18, from 1950 to 1954. He retired from the National Bureau of Standards on November 30, 1954. Walter J. Hamer, Chief of the Electrochemistry Section of the National Bureau of Standards, is the new chairman of Sectional Committee C18.

not previously listed in the specification is the flat cell which has found wide application to "B-battery" circuits in portable radio receivers and in miniature form for hearing-aid instruments. These supplement the usual cylindrical types of dry cells. A table listing 10 standard sizes of flat cells with cell designation, nominal dimensions, and approximate volume is included in the specification. The cell designations are carefully selected so as to allow for further miniaturization (smaller sizes) as well as intermediate and larger sizes.

A collection of dry batteries such as have been tested at the National Bureau of Standards is shown on page 135. This collection shows the wide variety of sizes and types of dry cells and batteries now in current use. It includes some of the older types which have been in production for over 40 years as well as the newer "miniaturized" types covered by the new American Standard Specification. Also shown are some of the new "flat-cell" and "air-depolarized" types.

The new specification also includes a major revision in the number and type of batteries for hearing-aids. The number of "A" batteries for use with vacuum-tube instruments has been increased from 7 to 15; the number of "B-battery" types from 11 to 23. Batteries for hearing aids are listed in Table 1. The newer types are designated by an asterisk, and it will be noted that the newer types are in general of smaller size. The advances made in the vacuum-tube type of hearing-aid instruments and their more general use by the public has resulted in these increased demands for smaller batteries and in some expansion of the testing facilities at the National Bureau of Standards to cope with current requirements. Some of the newer equipment and circuits used in testing hearing-aid batteries is shown on page 132. Results on performance of batteries listed in the table and obtained with apparatus as shown in part on page 132 have been incorporated in the new revision of the American Standard Specification.

Another feature of the sixth edition of the American Standard Specification is the inclusion, for the first time, of test procedures and performance requirements for photoflash cells for use with equipment employing expendable bulbs. Details on the procedures followed in testing a number of photoflash cells simultaneously are given in the accompanying article (page 135) by H. J. DeWane of the National Bureau of Standards. The test procedures were designed to correspond to average photoflash usage. In Table 2, data are given showing the specified service that should be obtained from photoflash cells of various sizes when subjected to one-

Table 1.—*Batteries for Hearing Aids*

Part 1. "A" Batteries for Vacuum-Tube Instruments

Battery designation		*Maximum dimensions (inches)*				*Nominal Battery*
Cylindrical	*Flat*	*Diameter*	*Length*	*Width*	*Over-all height*	*Voltages*
AA*	—	9/16	—	—	1-31/32	1.5
AA2	—	—	1-9/64	19/32	2-1/64	1.5
A*	—	41/64	—	—	2	1.5
C	—	1-1/32	—	—	1-31/32	1.5
CL	—	1-1/32	—	—	2-25/32	1.5
D	—	1-11/32	—	—	2-13/32	1.5
CL[1]	—	1-3/32	—	—	3-7/16	1.5
CD	—	1-1/8	—	—	4	1.5
F	—	1-11/32	—	—	4-3/16	1.5
M1*	—	0.625	—	—	0.660	1.35
M3*	—	1.000	—	—	.660	1.35
M4*	—	1.225	—	—	.660	1.35
MA*	—	0.625	—	—	1.95	1.35
MAA*	—	0.546	—	—	1.97	1.35
MAA2*	—	—	1-9/64	19/32	2-1/64	1.35

[1] Different type terminal

Part 2. "B" Batteries for Vacuum-Tube Instruments

Battery designation		*Maximum dimensions (inches)*				*Nominal Battery*
Cylindrical	*Flat*	*Diameter*	*Length*	*Width*	*Over-all height*	*Voltages*
—	10F11*	—	5/8	19/32	1-3/8	15
—	15F11*	—	5/8	19/32	2	22.5
—	20F11s*	—	5/8	19/32	2-39/64	30
—	20f11d*	—	1-7/32	5/8	1-27/64	30
—	10F12*	—	1-1/16	5/8	1-1/2	15
—	15F12*	—	1-1/16	5/8	2	22.5
—	20F12*	—	1-1/16	5/8	2-9/16	30
10NS	10F13	—	1-3/8	1-1/16	1-9/16	15
15NS	15F13	—	1-3/8	1-1/16	2-3/16	22.5
20NS	20F13	—	1-3/8	1-1/16	2-13/16	30
15NS	15F13	—	1-3/8	1-1/16	2-3/4	22.5
20NS	20F13	—	1-3/8	1-1/16	3-3/8	30
15N	15F14	—	1-13/32	1-1/16	4-1/32	22.5
22N	22F14	—	2-21/32	1-1/16	3-1/8	33
30N	30F14	—	2-21/32	1-1/16	4-1/32	45

* Newer type batteries for hearing aids.

Table 2.—*Performance of Photoflash Cells*

Cell designation	*Dimensions (inches)*		*0.15-ohm Intermittent test*	
	Diameter	*Height (over can)*	*Initial*	*6 month delayed*
AA	17/32	1-7/8	150	120
C	15/16	1-13/16	700	550
D	1-1/4	2-1/4	800	650

second discharges through resistances of 0.15 ohm every minute for one hour at 24-hour intervals for five consecutive days each week. For the "D-size," current production exceeds somewhat the specified value.

Other revisions incorporated in this sixth edition of the American Standard Specification for dry cells and batteries include the increase in the number of nominal voltages of dry batteries to include 300-volt batteries; the removal of cylindrical cells E, P, and U from the list of standard sizes owing to their infrequent use, and the introduction of size AAA, a size smaller than the common "penlite" cell (size AA); a complete revision in the standard types of "A" and "B" batteries; addition of approximate volume and weight for standard cell types; introduction of a new standard type of "C" battery and a new "A/B" battery pack; the introduction of two new intermittent tests and three new hearing-aid battery tests; and the introduction of a new terminal arrangement for 300-volt batteries.

The importance of the American Standard Specification is reflected in its widespread use in industry and research institutes and in its use as a model by some foreign countries. At the recent meeting of the International Electrotechnical Commission in Philadelphia, Technical Committee 35, Primary Cells and Batteries, gave careful consideration to the present edition of the Specification and accepted much of the material for inclusion in a draft of an international standard for primary batteries for world-wide use.

The publication of this revision of the American Standard Specification for Dry Cells and Batteries marks the completion of another step in the development of a nationally recognized specification. Since the beginning of the formulation of this standard, manufacturers of dry batteries and large industrial users have cooperated with representatives of the Government in perfecting tests and specifications for the various kinds of dry batteries. This cooperation has resulted in a really effective specification.

Dry cells and batteries in current use and covered by 1954 standard

Standard Test for Photoflash Cells

By H. J. DEWANE

National Bureau of Standards, Washington, D.C.

A TEST for cells manufactured for photoflash service using expendable bulbs is contained in the 1955 revision of the American Standard Specification for Dry Cells and Batteries,[1] C18.1-1954 (see article page 133). This is the first time such a test has been included in the standard. The test requirement in this specification is that "each cell shall be discharged through a resistance of 0.15 ohm for one second each minute for one hour at 24-hour intervals for five consecutive days each week. The following readings shall be taken: initial open-circuit voltage of the cell; closed-circuit voltage of the cell on discharge the first, thirtieth, and sixtieth minute daily."

In order to carry out this test simultaneously on a number of cells and obtain the required data with a minimum of personal attention, it was necessary to assemble the rather complicated array of electrical and electronic equipment into the circuits illustrated in Figure 1 (page 136). A 24-volt storage battery supply operates the six 24-volt, 10-ampere aircraft type relays (R-1 to R-6) that close the twelve 0.15-ohm discharge circuits. The 24-volt circuit is closed by the normally open relay R-7. An electrolytic condenser C is shunted across the 24-volt circuit to prevent sparking on the contacts of relay R-7. The latter relay is powered by a 22½-volt "B" battery. The 22½-volt circuit is closed once a minute by relay R-8 which operates on a 6-volt one-second impulse received from a master clock which operates a program machine (P.M. No. 1). The net result is that the three circuits involved in the discharge operation (24 volts, 22½ volts, and the discharge circuits) are closed once a minute for the duration of one second.

Voltage leads from the individual cells on test are connected to a

[1] Published in National Bureau of Standards Circular 559, *Specification for Dry Cells and Batteries,* approved August 19, 1954 as American Standard C18.1-1954.

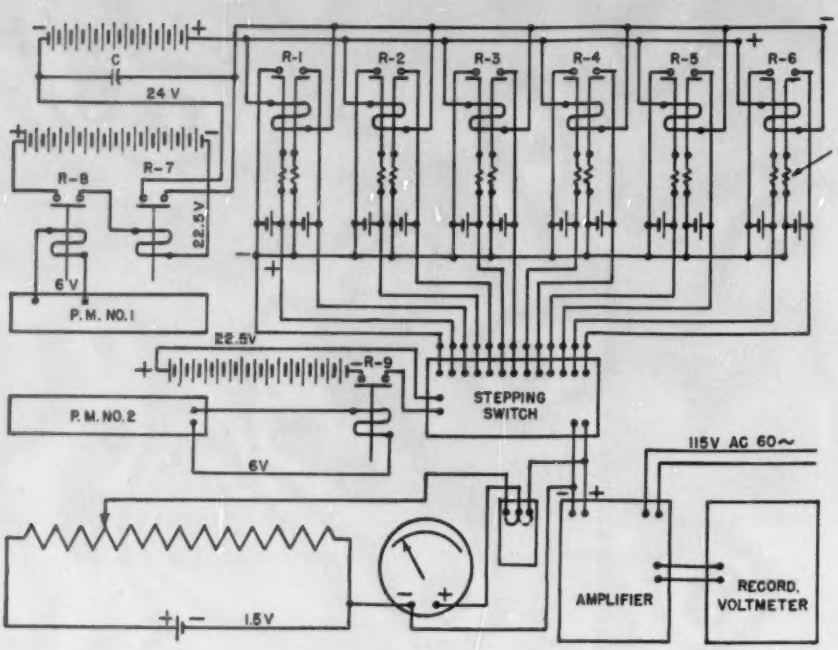


Figure 1. Circuits for testing a number of cells simultaneously.

rotary stepping switch which is powered by a second 22½-volt "B" battery. This circuit is closed and opened by relay R-9 which is controlled by a second program machine (P.M. No. 2) that is synchronized with the first program machine. This circuit closes simultaneously with the discharge circuit but does not open until 20 seconds have elapsed due to the delaying action of a dash pot on the second machine. The stepping switch advances on the break of the circuit moving the voltmeter leads to the next cell to measure its open and closed circuit voltages.

The stepping switch is connected to an amplifier and this in turn is connected to a recording voltmeter. In parallel with the amplifier-recording voltmeter circuit is a double loop circuit composed of a galvanometer key, a portable voltmeter, slide resistance, and a No. 6 dry battery. This arrangement is used to calibrate the recording voltmeter against the portable instrument which is previously calibrated by means of a potentiometer. The slide wire is adjusted so that the portable voltmeter registers a voltage obtained from the No. 6 battery that is close to the expected one-second load voltage of the cells on test. At the moment that the discharge circuits close, the galvanometer key is depressed, transferring the meter from the No. 6 battery to the battery whose discharge is being recorded. The voltmeter pointer moves through a very short arc and an accurate reading can be taken since there is no overswing.

The procedure followed in running a day's discharges is as follows: All the discharge relay contacts are blocked off by fiber inserts except that of Cell No. 1. The stepping switch is in the No. 1 position so that the open-circuit voltage registered on the voltmeters is that of Cell No. 1. This cell is disconnected and the zero point of the recording voltmeter is obtained by a zero set adjustment of the amplifier. The cell is then reconnected and the variable gain adjusted so that the true open-circuit voltage of the cell is recorded. Switches on the program machine are then closed to place it in operation. As the first minute comes up, discharge relay R-1 closes and the load voltage of the first cell is recorded. At the expiration of 20 seconds, the stepping switch moves the voltmeter circuit to Cell No. 2. The open-circuit voltage of this cell is recorded and in the meantime the insert on the discharge contacts of R-2 is removed. As the second minute arrives, the initial discharge of Cell No. 2 is recorded and Cell No. 1 receives its second discharge. This procedure is repeated until all the cells on the discharge circuits are working. The initial discharge of each cell is measured with the portable voltmeter and the calibration of the recording meter checked and readjusted if necessary. When the twelfth cell is read, the stepping switch moves the voltmeter circuit on to Cell No. 1. At this point the stepping switch is moved manually to Cell No. 2 to record its twelfth discharge. As a result of this move the thirteenth discharge of Cell No. 1 is not recorded but it puts the system in step so that the twelfth

Table 1. Results of tests of D-size photoflash cells of two manufacturers at intervals of six months.

Manufacturer A		*Manufacturer B*	
Capacity, initial seconds	*Capacity, 6-mo delay seconds*	*Capacity, initial seconds*	*Capacity, 6-mo delay seconds*
1850	1789	1086	976
1845	1769	1083	793
1708	1769	1057	732
1708	1403	808	447
1556	147	793	366
1525	135	752	183

Table 2. Data obtained in a series of qualification tests.

Number of		*Cell*	*Internal Resistance*		*Initial Flash*	
Brands	*Samples*	*Type*	*Initial (ohms)*	*Final (ohms)*	*Current (amps)*	*Capacity (seconds)*
4	24	D	0.118	0.357	14.3	1276
2	12	C	0.218	0.818	7.1	633
2	12	AA	0.285	1.020	5.2	155

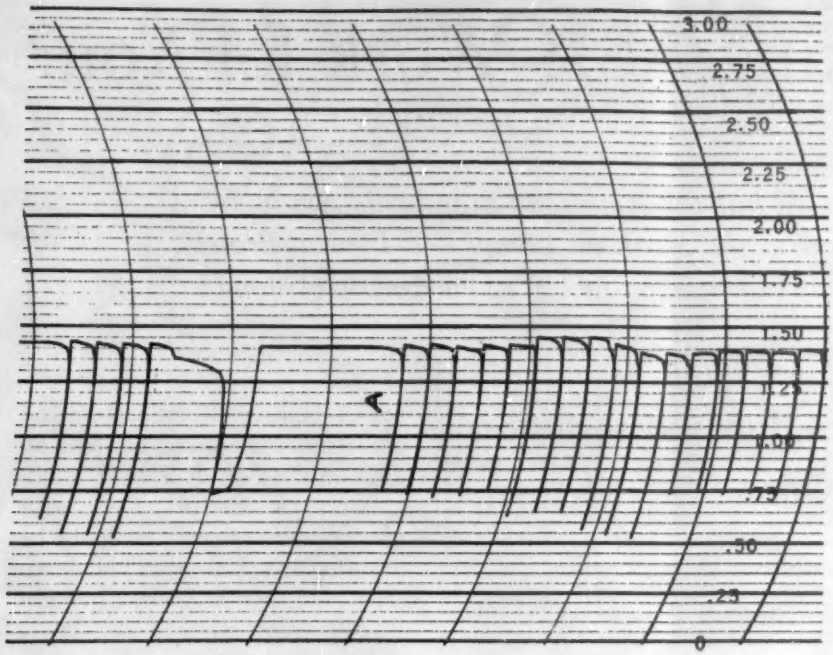


Figure 2. Graphical record of photoflash tests.

discharges of Cells 2 to 12 are recorded as well as the twenty-fourth, thirty-sixth, forty-eighth, and sixtieth of all twelve cells. The voltages at the thirtieth discharge can be obtained by interpolation between the twenty-fourth and thirty-sixth values. After the sixtieth discharge of Cell No. 1, its discharge relay contacts are blocked off and this is repeated in the case of the succeeding cells so that after 70 minutes and the seventy-first operation of the discharge circuits, all the cells have had 60 discharge periods.

Figure 2 shows the type of record obtained on this test. The recorder was operating at a rate of 12 inches per hour except at (A) where it was stepped up to 12 inches per minute to show the complete graph of a single discharge. At the slower rate only the minimum discharge voltage is obtained.

While the above test set up is rather elaborate, it functions very smoothly and can be operated by one technician working part time during the 70 minutes required per run. An excellent graphic record is obtained. The following table illustrates the wide variation in performance of cells within the same sample group and the effect of shelf age on this performance. It is based on tests of D-size photoflash cells of two makers.

Table 2 contains the average values of the data obtained in the course of running a series of qualification tests according to the procedure described in this article. The cells all were about one month old.

Information on the range of internal resistances of photoflash cells as determined by this test procedure has been used by lamp manufacturers in the design of improved photoflash bulbs.

"Flat-cell" type batteries for hearing aids are included in standard for first time.

A. Devaney, Inc

The Gaillard Seminar

JUNE 1955

The next private five-day Gaillard Seminar on Industrial Standardization will be held from June 13 through 17, 1955, in the Engineering Societies Building, 29 West 39 Street, New York City. Leader of the seminar is Dr John Gaillard, management counsel, formerly a member of the staff of the American Standards Association and lecturer at Columbia University.

The June, 1955, seminar will consist of ten conferences, two being held each day, Monday through Friday, one in the morning (9:30 to 12:00) and one in the afternoon (1:30 to 4:00). Basic analysis of standardization applicable to any industrial activity will lead up to organization and procedure of company standardization, and principles and practice of effective specification writing. Stress will be laid on use of standards in planning for the future and smooth revision of standards to keep up with continuous progress, Round-table discussion of each subject will follow its presentation by Dr Gaillard, thus giving each conferee an opportunity to bring up problems arising from his work.

The Gaillard Seminars, started in 1947 by request from industry for guidance in this field, have so far been attended by 272 men representing 150 organizations. Among these are American and Canadian companies; trade associations; the USA Army, Navy, and Air Force; National Bureau of Standards; the ASA and four foreign national standards bodies; the American Society of Mechanical Engineers; Mellon Institute; Massachusetts Institute of Technology; and the Universities of California and Illinois.

For further details and registration, write to Dr John Gaillard, 400 West 118 St, New York 27, N.Y. Places at the seminar may be reserved in advance.

Are You Making ASA Work for You?

A trilogy of articles—*What the American Standards Association Has to Offer; Progress in the Work on Lamps — a Typical Project;* and *How One Company Encourages the Use of an American Standard*

What the American Standards Association Has to Offer

by CYRIL AINSWORTH

Technical Director, American Standards Association

This and the article on "Progress in the Work on Lamps" are excerpts from a paper presented by Mr Ainsworth before the Chicago Section, Illuminating Engineering Society, Chicago, Illinois, March 4, 1955.

MUCH of our work at ASA consists of explaining the functions of our organization and the advantages in using its services. In that respect we might be compared to a telephone company. The more subscribers we have who know how to use our facilities, the greater will be the benefit to all our subscribers.

The "ASA team" consists of a membership of 110 national engineering societies and trade associations and about 2300 individual companies.

ASA is a non-profit, public service organization whose main functions are:

One, to offer the machinery for the development of nationally recognized standards.

Two, to review and approve national standards submitted for approval as "American Standard."

Three, to promote knowledge and use of standards.

And four, to serve as a national clearinghouse for information on standards in this country and abroad.

ASA does not dictate, create, or write standards. It simply makes it possible for other people to come together and develop a standard.

As in the case of the telephone company:—ASA can connect you, but it doesn't tell you what to say.

I have been asked: What advantage does an American Standard offer to a member of the Illuminating Engineering Society, for example?

The main advantage is this: An American Standard is approved only if it has found acceptance by all major parties that are concerned with its use. This would include, among others, the manufacturer, the consumer, the designer, the engineer, the trade association, and frequently the trade unions and the government. By recommending or specifying an American Standard where one is available, you can be reasonably certain that your specification will be understood and accepted by all who are concerned with its execution.

Where no nationally recognized standard exists, and where you feel one is needed, you, as members of ASA, and also non-members, can sponsor a standard project through our facilities. You can invite every individual, company, or organization interested in such a standard to cooperate with you on the project.

The need for such an organization as ASA became apparent during World War I. At that time, a number of military departments asked our main engineering societies to assist in the development of standards for war materiel. These societies organized committees to do the job. However, they soon found that there was no coordination between the various branches of the military departments, and that the committees were working at cross purposes, duplicating each other's efforts and producing conflicting requirements.

Five of the engineering societies decided to establish a coordinating committee. These five societies were the American Institute of Electrical Engineers, the American Society of Mechanical Engineers, the American Society of Civil Engineers, the American Institute of Mining Engineers, and the American Society for Testing Materials.

This new coordinating agency was called the American Engineering Standards Committee. It held its first meeting in October 1918. Soon after this, the U.S. Departments of Commerce, Army, and Navy joined the committee as founding members.

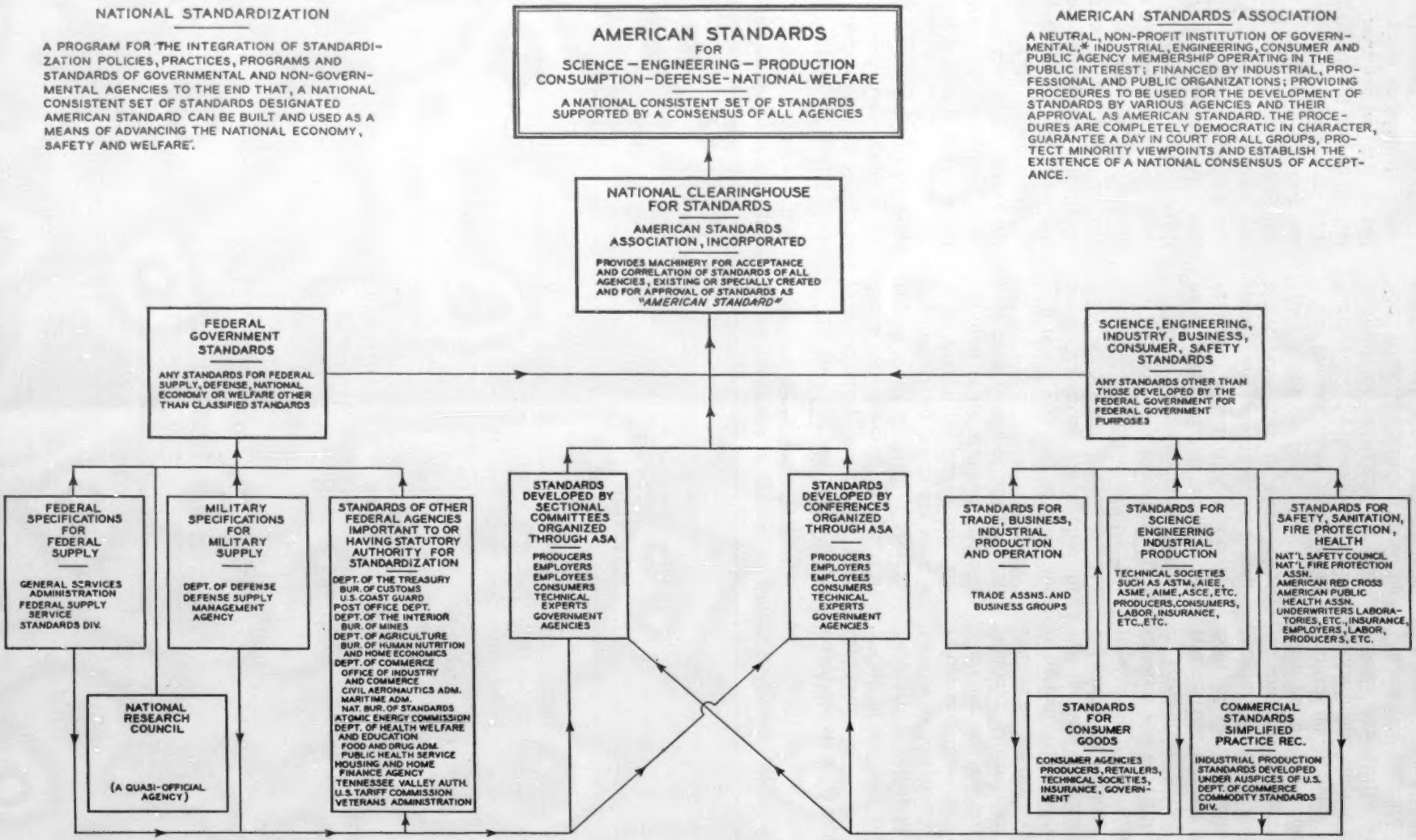
In 1928 a reorganization became necessary because of an increase in activity which could no longer be handled by the original set-up. The organization was renamed the American Standards Association. The change brought into existence a Board of Directors, which handles policy, administration, and financial matters, and a Standards Council, which represents the member-body membership of ASA as the supervisor of all technical activities.

The fundamental object of ASA is to bring into existence in this country a single, consistent set of standards, designated "American

NATIONAL STANDARDIZATION IN THE UNITED STATES OF AMERICA

NATIONAL STANDARDIZATION

A PROGRAM FOR THE INTEGRATION OF STANDARDIZATION POLICIES, PRACTICES, PROGRAMS AND STANDARDS OF GOVERNMENTAL AND NON-GOVERNMENTAL AGENCIES TO THE END THAT, A NATIONAL CONSISTENT SET OF STANDARDS DESIGNATED AMERICAN STANDARD CAN BE BUILT AND USED AS A MEANS OF ADVANCING THE NATIONAL ECONOMY, SAFETY AND WELFARE.



AMERICAN STANDARDS ASSOCIATION

A NEUTRAL, NON-PROFIT INSTITUTION OF GOVERNMENTAL,* INDUSTRIAL, ENGINEERING, CONSUMER AND PUBLIC AGENCY MEMBERSHIP OPERATING IN THE PUBLIC INTEREST; FINANCED BY INDUSTRIAL, PROFESSIONAL AND PUBLIC ORGANIZATIONS; PROVIDING PROCEDURES TO BE USED FOR THE DEVELOPMENT OF STANDARDS BY VARIOUS AGENCIES AND THEIR APPROVAL AS AMERICAN STANDARD. THE PROCEDURES ARE COMPLETELY DEMOCRATIC IN CHARACTER, GUARANTEE A DAY IN COURT FOR ALL GROUPS, PROTECT MINORITY VIEWPOINTS AND ESTABLISH THE EXISTENCE OF A NATIONAL CONSENSUS OF ACCEPTANCE.

NOTE: Arrows pointing upward indicate flow of standards developed by government or non-governmental agencies through the national clearinghouse for acceptance by all groups concerned and for approval as American Standard.

Arrows pointing downward indicate flow of policies, practices, data, experiences of governmental and non-governmental agencies for correlation through sectional committees or conferences organized by ASA for the development of standards by all groups substantially concerned.

ASA financed by industry, business, professional and public interest groups because non-governmental groups profit first and most by standardization work.

*After 30 years of joint operation of ASA with industry, ten government departments and agencies withdrew from membership in 1948, at the time of state incorporation of ASA. Technical cooperation continued. No change in ASA membership structure took place and government agencies may again have membership whenever their policies permit.

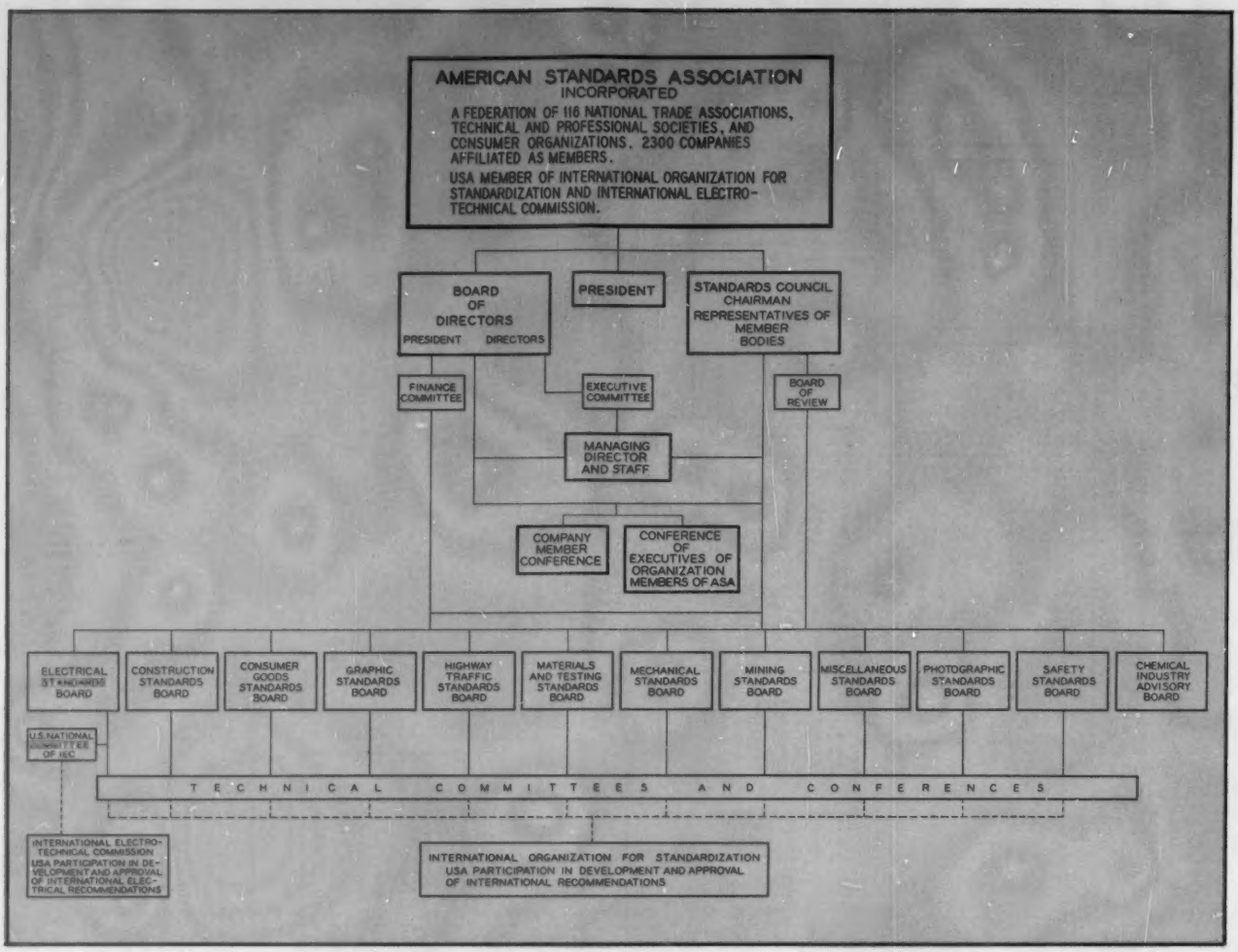


Chart showing relation of member groups in ASA setup and of technical committees to Standards Boards and to international standards organizations.

Standard." There are several methods by which American Standards can be created. These methods are based on a few fundamental principles.

The *first* of these principles is that an organization substantially concerned with the subject matter has an inherent right to representation on the body dealing with the subject.

The *second* principle is that each organization is guaranteed its day in court. It is obviously not enough to allow a member to sit on a committee if he can't make himself heard. A few years ago ASA sent back to committee a standard submitted for approval, because one committee member had voted against it. ASA's decision in this case was not based on the merits of the technical argument, but only on the fact that this man had felt that he had not been given an adequate opportunity to represent his point of view.

The *third* and most fundamental principle under which ASA operates is the consensus principle. This applies to the initiation of projects, the methods by which the work is to be carried on, and to the final approval of the standard that may have been developed under a project.

It is not very easy to define the word "consensus" as applied by ASA. A consensus is somewhat like a giraffe—a hard animal to describe, but an easy one to recognize.

Consensus does not mean "unanimous acceptance," or "majority acceptance." In fact, ASA rules do not specify any percentage of acceptance. ASA tries to weigh votes, rather than count them.

For instance, many years ago we had a project for developing a safety standard for mechanical refrigeration. When this standard came up for approval, it was found that all committee members supported it except two.

One of the two negative votes happened to belong to a manufacturer who had developed a safer refrigerant than his competitors. The other vote was that of the stock insurance group which was interested in the use of the safest possible refrigerant. What had happened was that the new refrigerant threatened to put a tremendous competitive pressure on those refrigerant manufacturers who were using other types of refrigerants. Strong commercial rivalries had affected the deliberations of the standards committee. Weighing the votes, ASA found that the vote of the refrigerant manufacturer might have commercial bias and that the insurance vote because of the public interest involved was heavier than all the positive ones, and sent the standard back to the committee. Because of the public

interest aspect it was evident that the insurance group had not had its full day in court. Two years later a revised standard came up for approval with unanimous support.

This is a good illustration to show why truly national standards can best be produced under the auspices of a truly national organization that has no interests of its own—technical, commercial, or otherwise—in the subject matter.

We have several ways in which an American Standard is developed.

The first and most common way is known as the *Sectional Committee Method*. When a consensus exists on the need for a standard and a new organization is needed for its development, a sponsor under the auspices of ASA invites all organizations that are substantially interested in the subject matter to form a committee. This committee is then known as the ASA Sectional Committee on "such and such" a subject.

A typical example of such a committee is the one sponsored by IES in 1921 for the project on industrial lighting. Eighteen national organizations and two departments of the federal government were the basic members of this new national group. The original standard was based on work started by the Illuminating Engineering Society in 1915. It concerned itself with a code of lighting factories, mills, and other places of work. The American Standard was revised in 1930, 1942, and most recently in 1952.

A second way is the one known as the *Existing Standards Method*. Organizations with a standard-formulating program of their own may present a finished standard to ASA for approval, if such standard promises to find national recognition. The American Society for Testing Materials is the foremost organization making use of this particular ASA procedure. Many other organizations, in an effort to get wider acceptance for their own standards, are also interested in this method. The IES submitted two standards under this method—Street and Highway Lighting, D12, and Illuminating Engineering Nomenclature and Photometric Standards, Z7.

Under the Existing Standards Method the submitter is required to present evidence that the standard has been accepted by all groups concerned. The following is an example of how such proof of consensus is collected:

The Underwriters Laboratories recently initiated a program for ASA approval of standards that determine the safety performance of electrical and fire protection products. Under this program the laboratories conduct their own survey among national groups that are concerned with the particular subject. This canvass is quite time-consuming and painstaking in nature, involving detailed answers, comments, and criticism. When this procedure is completed, the standard may be somewhat different from its original form. The Underwriters Laboratories tabulate the results of the canvass and submit copies of the tabulation to ASA as evidence of the consensus on the standard submitted for approval.

The third procedure for bringing an American Standard into existence is known as the *General Acceptance Method*. Under this provision an organization may submit a standard to ASA for approval and suggest that ASA call a national conference to consider the standard. This method is intended mainly for simple projects, which, however, may cover important subjects.

An excellent illustration of the use of this procedure is the acceptance in the early 1930's as American Standard of the "inch millimeter conversion factor." This standard was suggested by the Ford Motor Company, which, because of its foreign operations, needed a conversion factor between the inch and metric systems which could be readily used for industrial purposes and not require use of a legal conversion factor that had to be carried out to 5 or 6 decimal places.

To consider the simpler conversion factor, ASA called a conference attended by more than 50 national organizations. They drew up an American Standard which, by agreement, carries the conversion to *one* decimal place, (25.4). The American Standard has since become international through its adoption by the standards bodies of about 20 other nations.

A fourth ASA method is the *Proprietary Standards Method*, used mainly for the revision of standards previously approved by ASA. The American Society for Testing Materials, for instance, is generally assigned so-called proprietary sponsorship for revision of standards that have been originally approved by ASA under the Existing Standards Method. The advantage of the Proprietary Method is that the initiating organization can revise its own standards within its own organization and without setting in motion the ASA machinery for standards revision. The revisions of the American Standards previously mentioned as submitted by IES under the Existing Standards Method are handled under the Proprietary Standards Method.

All American Standards, incidentally, no matter by which method they have been approved, are reviewed periodically and revised if necessary. There is no such thing as a rigid American Standard that limits development and restricts progress. On the contrary, we believe that standards are one of the most important tools for technological progress. One of our most cherished mottoes, formulated by a former ASA official, is: Problems that have been solved by standards become a matter of routine, thereby freeing the creative faculties for problems that are still unsolved. If you want to have a standard of truly national application, there is no substitute for an American Standard. It reaches far beyond the confines of a single trade or technology to include all who have an interest and a stake in the subject matter.

A trade standard compares to a national standard as a local dialect compares to a literary language. A local dialect is a standard of communication within a small region. A literary language is a standard of communication for an entire nation, and often for several nations.

No standard at all is Babylonian confusion.

General Electric

Dependable lighting is important in this optical shop.

PROGRESS IN THE WORK ON LAMPS—

A Typical Project

To insure that lamps are interchangeable, both mechanically and electrically, ASA Sectional Committee C78, Electric Lamps, works together with the C81 group on Lamp Bases and Holders, and the C82 Committee on Lamp Ballasts.

The C78 Committee, Electric Lamps, was organized in 1946 at the request of a leading manufacturer of lamps. The committee's work has resulted in the approval of 45 separate American Standards for incandescent lamps. These include lamps for general service, trains, country homes, spotlights, infra-red lamps, street series lamps, and miniature lamps. Each of the standards covering the larger lamps makes reference also to a base and bulb standard for individual sizes.

These standards were developed by Subcommittee 1 of C78 on Incandescent Lamps under the chairmanship of L. E. Barbrow of the National Bureau of Standards. They cover almost 100 types and sizes of large incandescent lamps, including all that are in common use in the United States.

One of these standards, the American Standard for Miniature Incandescent Lamps, is unique. It not only insures interchangeability of about 60 types of lamps that it specifically lists, but it also incorporates a procedure by which ASA assigns uniform trade numbers to miniature lamps. This procedure makes it possible for the consumer to ask at a local store for a particular lamp by a specific number. He is assured of getting a lamp that will be completely interchangeable — mechanically and electrically — with the one he is replacing, even if the two lamps were made by different manufacturers. In functioning as a recording agency for such trade numbers, ASA is performing a valuable service both for the consumer and the producer.

In addition to the some 60 lamps listed in the American Standard, ASA keeps a complete record of all other miniature lamps manufactured in quantity by the various manufacturers. These files are constantly being consulted to avoid assigning the same trade number to two lamps of conflicting characteristics. ASA not only records trade numbers of lamps in general use, but also of many lamps made for special purposes, such as those required for military equipment. A total of about 70 new trade numbers are assigned by ASA each year.

Because this procedure has been considered quite successful, it has now been suggested that similar methods be adopted for the assignment and recording of designations for mercury vapor lamps, photolamps, and fluorescent lamps. The manufacturers believe that the consumer would greatly benefit if he could use a simple designation, consisting of letters or numbers, or a combination of both, when buying such lamps. The manufacturer would place this designation both on the lamp and on the carton in which it is marketed. He would use the number in scheduling production, as well as in distribution and merchandising. A special committee, operating under the auspices of Committee C78, has just decided tentatively on a three-letter code designation system for photo lamps. This decision awaits further investigation to determine its suitability as a designation system for the products manufactured by all the companies to which they assign the title "photo lamps." This three-letter system, if established, has the capability of encompassing 17,000 types of lamps.

A novel extension of the ASA procedure in recording such designations has been proposed. It has been suggested that, after recording the designation at ASA, a complete specification of every type of lamp be circulated to the various manufacturers participating in the program. At present this is being done only for those lamps listed in the American Standard. All information about special lamps is being kept strictly confidential.

The foregoing represents the work

of only one subcommittee of the parent C78 sectional committee, which has a total of three subcommittees.

The C78 sectional committee itself is composed of seven producers, eight consumers, and six general interest representatives. In accordance with ASA procedure, the representatives of this sectional committee are classified in accordance with their business affiliation, and the committee is carefully balanced so that no one group can ever have the majority of the vote. The committee does most of its work by correspondence in the form of letter ballots, but it meets occasionally to review and plan the work of the subcommittees which prepare the standard. The chairman of the parent committee is E. H. Salter, of the Electrical Testing Laboratories, who is also very active in the affairs of the Illuminating Engineering Society.

The second child of C78 is the Subcommittee on Electric Discharge Lamps, with D. L. Clary, of Electrical Testing Laboratories, as its chairman. As you know, electrical discharge lamps have been used publicly on a large scale since 1939. However, the number of types and sizes of these lamps and their auxiliary equipment has grown topsy-turvy, and some years ago the problem of providing complete interchangeability became a very pressing one. To cope with it, this subcommittee was organized in 1946. The committee was to iron out some of the conflicts that had already arisen, and to provide a forum that could standardize mechanical and electrical characteristics of lamps to be designed in the future.

Continuous rows of fixtures here provide illumination level of 60 footcandles. ASA program makes it possible to replace lamps with others both mechanically and electrically interchangeable.

To date this subcommittee has developed and published 30 American Standards in the form of separate data sheets for each type and size of lamp. These cover preheat start, instant start, cold cathode, bactericidal, and circular preheat start lamps. Each standard includes specifications of tube diameter, lamp length, and electrical characteristics. The lamp dimensions listed are confined to those necessary in the drawing of plans for the manufacture of lamp holders, lighting fixtures, and lighting installations. The electrical characteristics in each standard include the lamp operating volts, current and watts; the design starting volts; and the preheat current and preheat time.

These standards are now being reviewed so as to specify more closely the electrical characteristics of many of the lamps. It developed that the various laboratories concerned, including those of manufacturers, were not following a standardized procedure which could give accurate reproducible results.

Arthur Weeks, of the Champion Lamp Works, who is chairman of an IES subcommittee, as well as a participant in the work of the ASA subcommittee, conducted the rewriting of the IES Guide for Electrical Measurements of Fluorescent Lamps. It is hoped that this Guide will also become an American Standard. By setting forth in great detail the recommended procedures for the measurement of fluorescent lamps, it makes possible more precise and easily reproducible deter-

minations of lamp characteristics.

Representatives of the manufacturers on the subcommittee are now in the process of making use of these procedures in reviewing many of the lamps listed on the existing American Standards. The review has already led to a number of proposed changes in the specified characteristics. Not all of these changes have been made necessary by the improved techniques of measurement procedures. Some of them are due to improvements in technology, such as newer phosphors.

Subcommittee 2 has also embarked on the preparation of complete standards for mercury vapor lamps and for rapid-start fluorescent lamps, in particular the 40 Watt T12 and the 100 Watt 96 inch T12. The committee has also received, but not acted on, a proposal to standardize three rapid start fluorescent lamps—48 inch, 72 inch, and 96 inch in length—equipped with medium bipin base and Mogul pins, and intended for street lighting.

Much thought has been given by this subcommittee to the problem of standardizing the color appearance and rendition of fluorescent lamps. A series of round robin tests indicated that further work must be done on codifying color measurement techniques so that results by different laboratories can be compared and reproduced.

Standards of electrical discharge lamps must of necessity be integrated with standards for auxiliary equipment, such as starters and ballasts, since the electrical characteristics of each determine the over-all performance of the circuit. For this purpose two separate committees were established — subcommittee C78-3 on Fluorescent Starters, chairman G. A. Freeman of Westinghouse; and Sectional Committee C82 on Lamp Ballasts, chairman E. H. Salter of Electrical Testing Laboratories.

Let's look first at the work on starters and then on ballasts. During the past 15 years a considerable amount of standardization of starters has been accomplished by the industry itself. This work has been recorded in a number of specifications, including those of the National Bureau of Standards, Underwriters Laboratories, and Certified Starter Manufacturers. The two proposed American Standards that have been developed on this subject were formulated by a committee on which all these groups, as well as others, are represented. At present these two proposed American Standards are being circulated for a peroid of trial and study. The subcommittee plans to convene soon to review in detail any comments and criticism, and to bring the standard up to date with recent developments, before submitting them for approval as full-fledged American Standards.

Sectional Committee C82 on Lamp Ballasts has so far produced three proposed American Standards which are presently out for trial study and use. In addition, the C82 committee has prepared a first draft of a specification for mercury vapor lamps.

Having set up two committees to insure the interchangeability of lamps and their related equipment, the lamp manufacturers and users turned to the problem of lamp bases and holders. Another sectional committee, C81, was established under the title "Electric Lamp Bases and Holders." The first standard published by this group was the American Standard Dimensions for Rolled Threads for Screw Shells of Electric Lamp Holders and for Screw Shells of Unassembled Lamp Bases.

At present Sectional Committee C81 is considering a standard that covers the requirements of interchangeability of screw based lamps in corresponding holders, as well as 23 single sheet standards covering the dimensional characteristics of various fluorescent lamp bases, starter bases, lamp holders and starter holders. All these standards are aimed at providing proper engagement and interchangeability of all types of lamps and starters.

A fourth sectional committee, C79, has been established to round out the full picture of standardization of electric lamps and related equipment. This committee has developed two standards that set up a system of nomenclature to cover the dimensions for glass bulbs, glass bulb component parts, and molded glass flares, used in the manufacture of electric lamps and electron tubes, including cathode ray tubes. The designation system is basically the same as that originally administered by the National Electric Lamp Association, which first recorded a bulb designation under this system in 1910.

All these committees, it should be noted, cooperate also on an international level in an effort to produce internationally recognized specifications. They do this through the International Electrotechnical Commission (IEC) and the International Commission on Rules for the Approval of Electrical Equipment (CEE).

Trend toward modern lighting in all types of shops makes lamp standards increasingly important. This candy shop is using incandescent lamps for downlights and fluorescent lamps in showcases.

How One Company
Encourages the Use of an American Standard

This is a reprint of a flyer issued by the Sylvania Electric Products, Inc, for distribution to manufacturers of projection equipment. It calls attention to American Standard dimensions for lamps used in photographic projectors and urges designers to allow for maximum dimensions so users of projectors can replace lamps easily.

The standard mentioned here, PH22.85-1953, provides dimensions for base-down type lamps. An additional standard on dimensions for projection lamps of the base-up type, PH22.84-1953, is also available.

American Standard dimensions as well as electrical characteristics have also been agreed upon for incandescent lamps and for electric discharge lamps. Some 45 American Standards are now available for incandescent lamps and 30 for electric discharge lamps, as well as a number on auxiliary equipment for these lamps.

• Lamp Tolerances as a Basis for the Design of Projection Equipment •

The incandescent lamps used in projectors have one characteristic in common with all manufactured articles—the need for tolerances during fabrication. To a design using such lamps, the problem is one of degree and understanding. Perfection of dimension is neither necessary from a practical standpoint nor desirable from a cost standpoint.

There is, however, one important difference between an incandescent lamp and many other products. This is its status as a "replacement" item. Several hundred may be used in a single socket during the life of a projector (although a more representative average is 10 or 20). Obviously, therefore, everyone of these several hundred lamps must fit in the physical as well as the optical sense. Such a concept is fundamental to the work of the American Standards Association. Its lamp standards can be summarized in one word—interchangeability — applying to all lamps and all equipment.

A quality manufacturer such as Sylvania attempts to remain well within maximum dimensional limits. However such a goal should not be misused by designing a lamp housing or other device around a group of Sylvania lamps. The ultimate purchaser of the projector may buy lamps from any source; therefore such equipment must readily accept any lamp which meets a published industry standard.

One key standard (PH22.85-1953) is reproduced on page 146 with the permission of the American Standards Association. It shows the dimensions for medium prefocus base-down types of projection lamps. Full size copies for engineering department use may be obtained from ASA at 70 East 45th Street, New York City. Herewith are some pertinent points:

1. Dimensions are given for both T-10 and T-12 lamps.
2. The dimensions are more closely specified in the direction of the optical axis than at right angles to it.
3. The dimensions include not only the largest lamp but the space it can occupy if it is not perpendicular to the base line, if the socket is not properly mounted, or if there are variations in the socket.
4. The location of the filament is specified but it too involves certain tolerances.
5. The lamp length as given is "maximum over-all." While few manufacturers approach this value, it must be kept in mind for the occasional lamp.

An examination of existing equipment shows two ways in which manufacturers tend to overlook dimensional maximums. One concerns the space necessary to insert a lamp. This applies to finger-room (if strength must be applied in this manner) as well as rotation space. While bulbs themselves are symmetrical about an axis, it must be remembered that this axis may not be perfect in relation to the socket axis. Thus insertion or removal, along with the non-symmetry of fingers or hand. may result in difficulties.

The second point concerns lugs, fins, or other projections in the lamp housing. The need for ventilation is in itself a good reason why adequate space must be provided; however on occasion a metal boss (required for some external need) may project into the housing far enough to result in glass scratches, etc, on lamps at maximum off-center or off-size dimensions. Frequently one sees a scratched condenser lens as evidence of this.

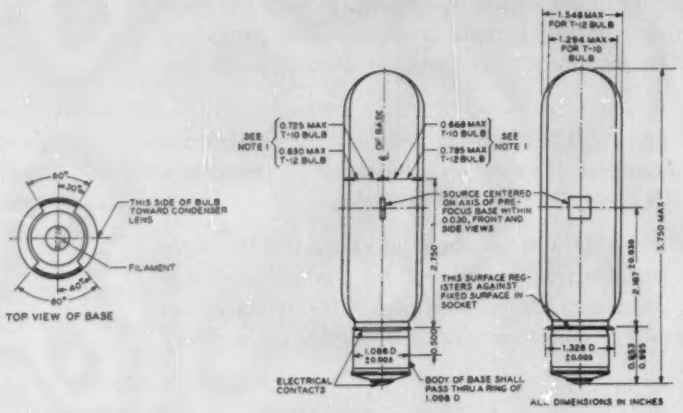
Incandescent lamps are an integral part of film projection. Make it easy for your customers to get the full benefit of these carefully engineered products.

This is a reproduction of American Standard PH22.85-1953 referred to in the article on the preceding page.

American Standard

Dimensions for Projection Lamps Medium Prefocus Base-Down Type for 16mm and 8mm Motion Picture Projectors

ASA
Reg. U. S. Pat. Off.
PH22.85—1953
*UDC 778.55:621.326.73



1. Scope. The purpose of this standard is to establish, for the type of lamp shown, the dimensions essential to interchangeability of lamps in projectors. It is not intended to prescribe either operating characteristics or details of design.

2. Operating Position. Lamps of this type are intended to be burned with the axis in an essentially vertical position, and with the base at the bottom.

Note 1. These dimensions define the maximum excursion of the bulb surfaces from the base axis toward the condensing lenses and the mirror at the points indicated when the lamp is inserted in a holder which rotationally positions the lamp as shown in the end view of the base. Condensing lenses, the mirror, and their mounts must therefore be so located as to insure adequate clearance between these parts and the bulb surface.

Note 2. For medium prefocus ring double-contact base-up projection lamps, see American Standard Dimensions for Projection Lamps Medium Prefocus Ring Double-Contact Base-Up Type for 16mm and 8mm Motion Picture Projector, PH22.84—1953, or the latest revision thereof approved by the American Standards Association, Incorporated.

Approved January 8, 1953, by the American Standards Association, Incorporated
Sponsor: Society of Motion Picture and Television Engineers *Universal Decimal Classification

Mining Board Elects Borcherdt

The Mining Standards Board has elected E. R. Borcherdt, Research Engineer of the Anaconda Copper Mining Company, Butte, Montana, as vice-chairman for the Metals division. Mr Borcherdt succeeds Otto Herres, Vice-President, Combined Metals Reduction Company, Salt Lake City, Utah. Other officers of the Board are M. D. Cooper, Director, Mining Engineering Education, National Coal Association, chairman; and M. H. Forester, Falls Church, Virginia, vice-chairman for the coal division. F. C. Frost, American Standards Association, is secretary.

•

• Companies planning work uniforms for their employees can now receive free advice from the Institute of Industrial Launderers. A new, free consulting service was announced by the Institute early this year. There are no strings attached to the offer, Herman Fineburg, president of the Institute, declares. The consulting service will suggest general specifications to meet problems of laundering, cleaning, mending, and pressing work garments.

Members of the Institute are uniquely qualified to give such advice, Mr Fineburg pointed out, since they have cooperated with the National Safety Council on problems of garment safety in industry; with the U.S. Testing Company on studies of shrinkage, color retention, and loss of tensile strength, and with committees of the American Standards Association on standards of performance for work garments.

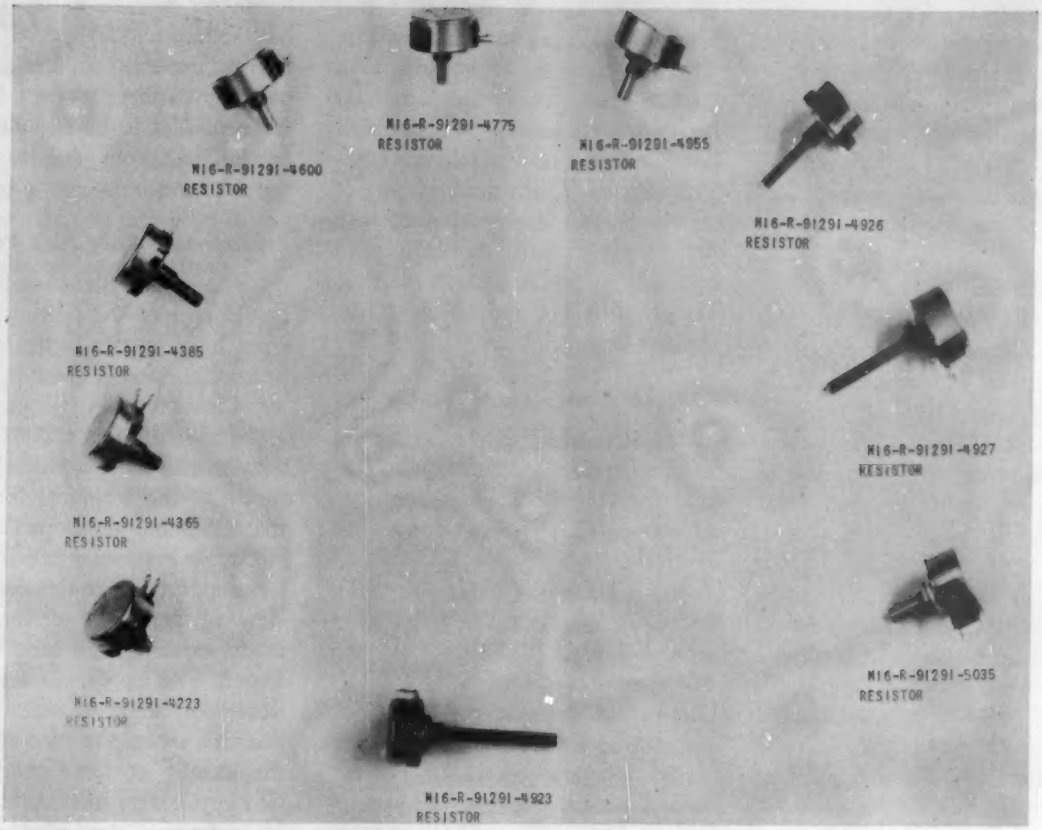
•

The Illuminating Engineering Society's Stake in ASA's Program

The Illuminating Engineering Society, one of the Associate Members of the American Standards Association, is typical of many other ASA Member organizations.

It is represented on no fewer than 20 ASA sectional committees. It is sponsor of Committee A11, Code for Lighting Factories, Mills, and Other Work Places, and of Committee A23, School Lighting. It is proprietary sponsor of Projects D12, Street and Highway Lighting, and of Z7, Illuminating Engineering Nomenclature and Photometric Standards. Among the many other committees on which IES participates are those concerned with definitions of electrical terms, office standards, abbreviations, letter symbols, drawing and drafting practices, and preferred numbers.

In the electrical field, IES is most closely concerned with Sectional Committee C78, Electric Lamps (see progress report of this committee's work, pages 157-158).



The nine variable resistors in semicircle have been replaced by one in lower center

STANDARDIZATION REDUCES DUPLICATION

Submitted to the Bureau of Ships Journal *by Electronic Supply Office, Great Lakes, Illinois, and reprinted from the January, 1955 issue of the* Journal *by special permission*

TO solve the problem of cutting down on excess population in the electronic maintenance parts field, the Electronic Supply Office at Great Lakes, Illinois, has embarked upon a full-scale standardization program.

The principle of this program is to find and establish a standard item which will serve in as many applications as possible, and thus eliminate multiple purchasing, stocking, and issue.

In many other industrial fields, parallel efforts have been made to reach the goal of standardization through voluntary agreement of trade associations or, in wartime, through governmental directives. In the comparatively new field of electronics, however, there are so many different factors of cost, production, reliability, and serviceability and such rapidly developing improvements that industrial standardization is almost impossible at the present time. This condition has forced the Electronic Supply Office to develop its own program for standardization from among the many variables provided by industry.

Guides Established

To carry out this supply standardization program, ESO has compiled a series of "Electronic Supply Office Guides for Standardization Items of Procurement and Supply," more commonly known as "EGSIPS." These guides are based upon the selection of those case sizes and characteristics which conform to military and Federal specifications having the broadest possible application in electronic equipment and which can be used most widely.

In establishing an item as a standard, care must be exercised to assure that it is acceptable and easily manufactured. It can be seen readily that a resistor of closest tolerance could replace all other resistors of the same value (ohms, wattage, and other characteristics), but the availability and cost of the closest tolerance resistors would prohibit this standardization. However, future study would reveal an optimum point at which the increase in cost

resulting from use of a closer tolerance resistor would be offset by the increased efficiency and ease of supply. It is this point—in our hypothetical case, the optimum value of tolerance—that ESO is endeavoring to determine and set forth in each EGSIPS.

Tolerance Values Indicated

The EGSIPS will indicate the value of tolerance of each standard item selected. All items with a greater tolerance will be replaced by the standard item. Items with a smaller tolerance will be considered as necessary special items and stocked accordingly.

The ESO standardization program began two and a half years ago and is now under the direction of the Research Branch, Technical Division, headed by Lt Charles B. Clark, SC, USNR. Lt Clark's chief assistant is Bernard Nunke and the team leader for the development of these standardization guides is John J. Neiman.

EGSIPS have been developed in 18 different commodity areas and since they were originated, more than 20,000 common items have been eliminated from the Electronic Supply System. This reduction in no way complicates service and repair of equipment; rather, it simplifies it in that the technician can obtain usable parts more readily and can depend upon standard performance of those parts.

As the program is extended into other commodity areas, even more simplification, dependability, and economy can be expected. For example, it has been found that capacitors with fixed mounting brackets may be replaced by standard capacitors with separate mounting brackets, both of which are presently stocked in the Electronic Supply System. By making this replacement, a considerable number of expensive capacitors having attached brackets can be eliminated from stock and only six different types of inexpensive brackets need be stocked. Using the removable bracket adds to the versatility of the capacitor since it increases the number of ways it can be mounted.

Similar standardization also has been made in the shaft length of variable resistors. In the instance of a flatted shaft, only the 2½-inch length will be stocked as a standard item. All other variable resistors with flatted and round shafts of shorter length can be replaced with this 2½-inch shaft. At the time of installation the technician will be expected to cut the shaft to the desired length.

Statistics Show Value

A few statistics on the work done in standardization during the current fiscal year will give some idea of the potential value of the program.

As of 1 January 1954, the standardization program for fixed wirewound resistors, MIL-R-26B, was 80 percent complete, with a reduction of 1,874 items, and an anticipated total reduction from 6,996 to 4,654. Review of variable wirewound resistors covered by specifications JAN-R-19 and MIL-R-22A, has only just begun, but a total reduction of 780 items is anticipated, based on the actual figure of 156 items reduced during the first 20 percent of the program.

Paper capacitors, MIL-C-25A, have been reduced from 7,720 items to 6,337. Now 60 percent complete, the net reduction to date of 1,383 items is expected to reach a figure of approximately 2,305 items. Likewise, the standardization program for ceramic capacitors, JAN-C-20A, also 60 percent complete, is expected to reduce the original total of 2,413 items carried in stock to a net of 1,862.

The category of toggle switches, initial review of which has been completed, originally contained 880 items. After standardization action, 73 switches were determined to be standard and 17 special; 318 items will not be replenished but demands will be fulfilled with the standard or special items. The remaining 472 will require further review before definite standardization action can be taken.

The category of insulators, which originally contained 538 items, is nearing completion. Thus far, 127 insulators have been determined to be standard and 69 special; 204 will not be replenished, and 138 are pending further review. Demands for items not to be replenished will be fulfilled from the standard or special items.

Electronic Work Aids Program

Some unique features of the ESO and Bureau of Ships electronics program have greatly facilitated standardization. One of these is the Master Characteristics Sequence File, an innovation at ESO. This file concentrates in one place, in usable form, all the technical background that ESO has developed regarding electronic maintenance parts needed for support of equipment. Photostats of segments of the file are made, covering the area under research. This spotlights the potential items for standardization and the research technician then can dig out the details of item characteristics and application in circuits.

Technicians are aided in their research through use of ESO's listing of parts duplication in equipments, item maintenance listings which show a breakdown of repairable assemblies, usage data files, contract files covering new equipments, manufacturers' parts lists, ESO's participation in the Navy Standardization Committee, and many other sources of technical data. This information provided by the Technical Division and the highly qualified skills of the men handling the program, plus the availability of additional professional assistance from other specialists within the division, assure management that the results of the research will be the most effective standardization possible.

The EGSIPS is a commonsense, workmanlike job, which already has paid for itself in preventing procurement of marginal use items and in improved availability of parts for prompt service of equipment. Future use of existing published guides and development of publications covering other commodity areas will continue to increase these savings and augment the over-all effectiveness of the Electronic Supply System.

INTERNATIONAL MEETINGS SCHEDULED

Twenty-five U.S. delegates will attend the ISO meetings in Europe during June and July:

Documentary Reproduction, Paris, June 2-4: D. C. Holmes, Library of Congress and M. E. Russell, Eastman Kodak Company, Rochester, New York.

Cinematography and Photography, Stockholm, June 2-16: A. G. Jensen, Bell Telephone Laboratories, Inc, Murray Hill, N.J.; W. F. Kelley, Motion Picture Research Council, Inc, Hollywood, Calif; Boyce Nemec, Society of Motion Picture and Television Engineers, N.Y.; M. E. Russell, Eastman Kodak Company, Rochester, N.Y.; M. G. Townsley, Bell and Howell Company, Chicago; D. R. White, E. I. du Pont de Nemours and Company, Parlin, N.J.; D. C. Holmes, Library of Congress, and Allen G. Stimson, General Electric Company, West Lynn, Mass.

Plastics, Paris, July 8-13: E. E. Ziegler, Dow Chemical Company, Midland, Mich; William A. Franta, E. I. du Pont de Nemours and Company, Wilmington, Del; C. Howard Adams, Monsanto Chemical Company, Springfield, Mass; Dr R. K. Witt, Johns Hopkins University, Baltimore; N. S. Skow, Synthane Corporation, Oaks, Pa; E. Y. Wolford, Koppers Company, Pittsburgh; R. R. Winans, New York Naval Shipyard, Brooklyn; Dr G. M. Kline, National Bureau of Standards; and Robert Burns, National Research Council.

Gas Cylinders, Stockholm, June 13-16: F.R. Fetherston, Compressed Gas Association, New York; H. F. Reinhard, International Acetylene Association, New York.

Copper and Alloys, Stockholm, June 13-15: Vincent P. Weaver, American Brass Company, Waterbury, Conn; and W. D. France, Scovill Manufacturing Company, also of Waterbury.

Continued on page 159

International Organization for Standardization

Date	*Place*	*ISO/TC No.*	*Title*
April 20-22	The Hague	5/SC 6	Pipes and fittings/Plastic tubes and fittings for conveying fluids
April 25-27	Paris	68	Standardization in the field of banking
May 9-11	Madrid	4	Ball and roller bearings
May 10-11	The Hague	80/SC 1	Safety colors/Definition of safety colors
May 10-13	Genoa	20	Aircraft
May 17-19	London	78	Aromatic hydrocarbons
May 23-25	Paris	5/SC 2	Pipes and fittings/Cast iron pipes, fittings and their joints
June 2-4	Paris	46/SC 1	Documentation/Documentary reproduction
June 6-8	Stockholm	1	Screw threads
June 9-11	Stockholm	3	Limits and fits
June 10-15	Stockholm	5	Pipes and fittings
June 13-16	Stockholm	10	Drawings (general principles)
June 6-11	Stockholm	17	Steel
June 13-15	Stockholm	26	Copper and copper alloys
June 6-10	Stockholm	27	Solid mineral fuels
June 11-16	Stockholm	36	Cinematography
June 13-16	Stockholm	41	Pulleys and belts (including vee-belts)
June 6-10	Stockholm	42	Photography
June 6-9	Stockholm	44	Welding
June 9-11	Stockholm	51	Pallets for unit load method of materials handling
June 11-16	Stockholm	58	Gas cylinders
June 7	Stockholm	73	Marks indicating conformity with standards
June 11-15	Stockholm		ISO Council
June 17-18	Stockholm		ISO General Assembly
June 20-24	Copenhagen	12	Quantities, units, symbols, conversion factors, and conversion tables
June 23-24	London	28	Petroleum products
July 5-7(8)	Brussels	38/SC 7	Textiles/Ropes and cordages
July 11-12	Brussels	72/SC 1	Textile machinery and accessories/Spinning preparatory, spinning and doubling (twisting) machinery
July 11-14	Brussels	72	Textile machinery and accessories
July 8-13	Paris	61	Plastics
September 28-30	London	25	Cast iron

International Electrotechnical Commission

Date	*Place*	*IEC/TC No.*	*Title*
May 3-5	Paris	21	Accumulators
June 28	London	SC 2 D	Losses and efficiency
June 29	London	2	Rotating machinery
June 28-30	London	3 Exp.	Graphical symbols (Experts)
July 1-5	London	3	Graphical symbols
July 6-7	London	SC 5 A	Steam turbines for turbo-generator sets
July 7-8	London	7	Aluminum
June 28-29	London	SC 8-1	Nominal system voltages
July 1-8	London	SC 12-1	Measurements
June 28-29	London	SC 12-6	Radio transmitters
July 8	London	12	Radio-communication
June 28-30	London	16	Terminal markings
July 4-7	London	SC 17 A	High voltage switchgear and controlgear
June 30-July 2	London	SC 17 B	Low voltage switchgear and controlgear
July 7	London	17	Switchgear and controlgear
July 4-8	London	SC 22-2	Dry plate rectifiers
July 8	London	22	Power converting equipment
July 7-8	London	23	Electrical accessories
July 8	London	28	Co-ordination of insulation
July 6-8	London	33	Capacitors for power systems
July 2-5	London	35	Primary cells and batteries
July 1-2	London	SC 36-1	Insulated bushings
June 29-July 2	London	SC 36-4	Suspension insulators fittings
July 4-6	London	36	High voltage tests—Insulators
June 28, July 1	London	37	Lightning arresters
June 29, July 2	London	39	Electronic tubes and valves
July 4-7	London	SC 40-1	Capacitors and resistors
June 28-30	London	SC 40-2	High frequency cables and connectors
June 28-July 1	London	SC 40-3	Crystals
July 1-2	London	SC 40-4	Electro-mechanical components
June 28, July 8	London	40	Electronic components
July 4, 9	London		IEC Committee of Action
July 8	London		IEC Council

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering please refer to the number following the title.

629.113 MOTOR VEHICLES

Czechoslovakia (CSN)

10 standards for different types of automobile and motor car headlamps and accessories CSN 304303; 304330; 304332/3; 304335/6; 304339/0; 304346

629.118 LIGHT VEHICLES WITH NOT MORE THAN TWO WHEELS

Czechoslovakia (CSN)

Control handle for motor cycle CSN 307680
Driving fixed handle of motor cycle CSN 307682
4 standards for wire reinforced bicycle tires CSN 631104; 1106/8
Inner tubes for bicycles CSN 631401

629.12 SHIPS AND SHIPBUILDING

Germany (DNA)

4 standards for special bolts with low hexagon and octagon heads and nuts used in shipbuilding DIN 80421, B1.1,2
DIN 80422, B1.1,2

629.13 AERONAUTICS. AIRCRAFT ENGINEERING

Poland (PKN)

Parachute control methods PN L-07132
Threaded holes for screws used in aircraft constructions PN L-82051
Testing of aircraft motors PN L-04001

631 AGRICULTURE

Czechoslovakia (CSN)

5 standards for agricultural machinery CSN 476826; 6910; 7602; 7802; 8381

Germany (DNA)

Hay grabs with 3 and 4 prongs DIN 11724

Mexico (DGN)

Bee honey DGN F 36

631.8 FERTILIZERS. MANURING

Mexico (DGN)

Bone fertilizers DGN R 18

635 HORTICULTURE

Norway (NSF)

16 standards for rules for sorting and packing various Norwegian vegetables NS 502-AM/509-AM; 513-M/519-M; 521-M

637.0 DAIRYING

Belgium (IBN)

Gravimetric method for determination of fat content in milk NBN 331

638.2 SILKWORM BREEDING

Poland (PKN)

Industrial classification of silkworms PN P-80251

643.33 OVENS. STOVES. COOKERS

United Kingdom (BSI)

Gas-heated catering equipment BS 2512:1954

651.2 OFFICE FURNITURE

United Kingdom (BSI)

Dimensions of wooden desks and tables for office use BS 2513:1954

661 CHEMICAL PRODUCTS IN THE NARROWER SENSE

Poland (PKN)

7 standards for different inorganic compounds for technical or alimentary use PN C-84103; 105; 106; 012; 80053; 055; 80269

662.6 FUEL INDUSTRY

Argentina (IRAM)

Coke, metallurgical IRAM 617

Czechoslovakia (CSN)

3 standards for coke CSN 656429; 7053/4;
Determination of caloric value of fuel 441352

Germany (DNA)

Solid fuel, Determination of ash content DIN 51730

Poland (PKN)

Technical analysis of coke PN C-04307
Sampling coal for testing PN C-04333
Tractor fuel PN C-96038
Motor fuel PN C-96080

664 PREPARATION AND PRESERVATION OF SOLID FOODSTUFF

Czechoslovakia (CSN)

102 standards for all kinds of semi-prepared, prepared, or preserved food products comprised in series CSN 56000 . . . , CSN 57000 . . . , CSN 58000 . . .

Mexico (DGN)

Preserved red pepper DGN F 39

664.2 STARCH AND STARCHY SUBSTANCES

Norway (NSF)

Potato flour: quality, grading, testing, packing NS 751/2

664.6 BAKERY AND CAKE MAKING

USSR

5 standards for different bakery products GOST 6649/50; 6351/2; 6696

665.4/.5 MINERAL OILS, FATS, AND WAXES

Czechoslovakia (CSN)

4 standards for different grade of liquid motor fuel oil CSN 656180; 6184; 6189; 6190

Poland (PKN)

Spindle oil (AU), technical data, sampling, and classification PN C-96046
Test for determination of solid residue in oil PN C-04089
Method for sampling of petroleum products PN C-04000
Ubbelohde method for testing viscosity of petroleum products PN C-04013
Specifications for mineral lubricating oils for vehicles PN C-96100

666 GLASS AND CERAMIC INDUSTRY

Czechoslovakia (CSN)

Milk bottles CSN 704930
6 standards for glasses for different railroad lanterns CSN 705550; 5560; 5610; 5640; 5660; 7750

666.17 HOLLOW GLASSWARE. BOTTLES

Germany (DNA)

Bottles for monopol alcohol DIN 6098
Bottles for sparkling wines DIN 6096
Form of the mouth of bottles for crown-closing DIN 6094, B1.1

666.76 FIREPROOF EARTHENWARE. REFRACTORY MATERIALS

Poland (PKN)

Marking of fireproof materials PN H-12001
3 standards for pyrometric cones and cylinders PN H-04175
PN H-04177/8

666.9 LIME. MORTAR. CONCRETE. CEMENT

Czechoslovakia (CSN)

6 standards for concrete mixers CSN 738401; 8410/2; 8414/5

Mexico (DGN)

Pozzolanic portland cement DGN C 2

667.6/8 PAINTS, VARNISHES, LACQUER, POLISHING MATERIALS

Poland (PKN)

3 standards for sampling and different tests of lacquers PN C-81500; 528; 530

668.3 ADHESIVES, GLUES

Germany (DNA)

Glues and their manufacturing DIN 16921

668.4 GUMS AND RESINS

Poland (PKN)

Turpentine PN C-97510

668.7 TAR DISTILLATIONS

Poland (PKN)

3 standards for tar pitch PN C-97035/6; 97071

669 METALLURGY

Austria (ONA)

Pure aluminum ONORM M 3426

Czechoslovakia (CSN)

35 standards for different classes and grades of quality structural steel and
17 standards for different classes and grades of quality alloyed structural steel series CSN 412000 . . .
series CSN 416000 . . .
6 standards for pure and alloyed copper CSN 42.300 . . .
9 standards for different classes of tool carbon steel CSN 419000 . . .

Germany (DNA)

Drawn copper round bars DIN 1767
Drawn aluminum and aluminum alloy square bars DIN 1796
Drawn aluminum and aluminum alloy hexagon bars DIN 1797

Poland (PKN)

Different steel forgings: blocks, plates, rings, etc PN H-94102
3 standards for analysis of different metals and their alloys PN H-04802/4
8 standards for chemical analysis of blast furnace dust PN H-04142/9
Method for testing metals for corrosion PN H-04600
Sampling and physical test methods of nonferrous metal waste PN H-15800
2 standards for structural alloy steel PN H-84029/30
2 standards for structural carbon steel PN H-84019/20

Portugal (IGPAI)

Aluminum and its alloys NP-30
Determination of silicon content in aluminum NP-33
Determination of iron content in aluminum NP-34

672.6 CHAINS

Germany (DNA)

Steel roller chains DIN 8185

674 WOOD INDUSTRY

Germany (DNA)

Wood preservation. General DIN 52175

Poland (PKN)

Wood waste for manufacturing of wood pulp PN D-95005

675 LEATHER INDUSTRY

Poland (PKN)

3 standards for different kinds of synthetic tannin PN C-26001/3

676 PAPER INDUSTRY

Czechoslovakia (CSN)

15 standards for different grades of paper for industrial purposes series CSN 502000 . . .
10 standards for different test methods for paper series CSN 500300 . . .
Paper bags CSN 505610
Paper envelopes CSN 506410

Germany (DNA)

Test for tearing resistance DIN 53113

677 TEXTILE INDUSTRY

Denmark (DS)

Determination of shrinkage of woven fabric after boiling laundering DS F 921
Determination of shrinkage of woven fabric after nonboiling laundering DS F 922

Germany (DNA)

Different methods of folding, rolling, and packing dry goods DIN 61711
Determination of moisture absorption by textiles DIN 53901
Cotton yarns DIN 60300

India (ISI)

Methods for determination of mean single fiber-strength and intrinsic strength (cotton) IS 235-1954
Method for determination of cotton fiber maturity count IS 236-1954

Mexico (DGN)

Sisal fiber DGN A 24
Sisal bale twine DGN A 25
Sisal bags and sacks DGN A 26

Netherlands (HCNN)

Determination of shrinkage in cotton and linen fabrics in washing V 2120

Poland (PKN)

5 standards for classification and determination of dimensions of different types of cloth: linen, cotton, wool, silk, hempen PN P-82007; -256; -469/70; 82656
Ends and fills count in textile fabrics per 10 cm^2 PN P-01705
13 standards for inspection methods of different textiles: cotton, wool, linen, silk, etc PN P-01701; -03; -04641; -44; -48; -51; -66; -73; -78/9; -04700

Sweden (SIS)

Determination of dry weight, moisture content, and trade weight of textile material SIS 65 00 23
Determination of yarn count by reeling SIS 65 00 24
Ballistic determination of tear resistance of tissues SIS 65 00 25
Determination of color fastness SIS 65 00 33

678 RUBBER INDUSTRY

Czechoslovakia (CSN)

17 standards for different physical and chemical tests of rubber CSN 621105; -1431; -62111/20; -1436; -1452/3; -1521; -1523

Norway (NSF)

Rubber plugs for general use NS 578

United Kingdom (BSI)

Synthetic resin (phenolic) moulding materials BS 771:1954
Vulcanized extruded rubber compounds and tubing BS 1155:1954

USSR

Elasticity test of rubber GOST 208-53

679.5 PLASTIC INDUSTRY IN GENERAL

Germany (DNA)

Determination of the form-preservation of plastics at high temperature DIN 53458
Impact bending test of plastics DIN 53453

Poland (PKN)

Determination of solvability of plastics in acetone PN C-89033

681.12 CONSUMPTION METERS, GAS METERS, ETC

Germany (DNA)

Flow measurement technique DIN 19202

681.61 TYPEWRITERS

United Kingdom (BSI)

Typewriters BS 2481:1954

683 HARDWARE, IRONMONGERY

Norway (NSF)

Flat window frame corners NS 807
Window fastners NS 808

685 LEATHER WORK

Czechoslovakia (CSN)

11 standards for different types of leather, plastic and fabric bags, briefcases, etc CSN 796000 . . .

69.02 STRUCTURAL ELEMENTS OF BUILDING

Norway (NSF)

Module for assembly dimensions for buildings, building parts, and building equipment NS 450

691 BUILDING MATERIALS

Austria (ONA)

Bituminous material used in building trade ONORM B 3660

Czechoslovakia (CSN)

Concrete mixtures of different proportions CSN 732010

Poland (PKN)

I-beams of pre-stressed concrete PN B-82515

691.8 BUILDING COMPONENTS

Germany (DNA)

Plaster boards DIN 18163

694 CARPENTRY, JOINERY

Germany (DNA)

Parquet flooring DIN 280

695 ROOFING

Belgium (IBN)

Terminology relative to roofing NBN 280
Tile roofing NBN 282

697 HEATING AND VENTILATION

Poland (PKN)

Sheet-metal stove pipe elbows PN B-77392

744 TECHNICAL DRAWING

Austria (ONA)

3 standards for different methods of drawing ONORM A 6060-; 6062; -6066

77 PHOTOGRAPHY

Poland (PKN)

4 standards for processing of sensitive materials PN C-99110/11; -99056/7

778 APPLICATIONS OF PHOTOGRAPHY

Norway (NSF)

Projection slides NS 818

778.5 CINEMATOGRAPHY

Czechoslovakia (CSN)

Reels for 16-mm motion picture films CSN 198581
35-mm motion picture film CSN 666510
16-mm double motion picture film CSN 666515
16-mm single motion picture film CSN 666516
8-mm motion picture film CSN 666520

RECENT PUBLICATIONS RECEIVED BY ASA

Abbott's National Electrical Code Handbook. Revised by Charles L. Smith. Eighth Edition, 1954. 642 pp, 5½ x 8, 394 illus. McGraw-Hill Book Company, Inc, 330 West 42nd Street, New York 26, N.Y. $7.50

Based on the 1953 edition of the National Electrical Code (American Standard C1-1953), this eighth edition of the Handbook is dedicated to the late Arthur L. Abbott who originated the Handbook and prepared the first seven editions. Charles L. Smith, Electrical Field Engineer of the National Fire Protection Association, prepared the present revision under the supervision of NFPA. The Handbook explains rules and measurements for electrical jobs—what they mean, and how to apply them—and lists Code rules by job title for all types of electrical installations. The book follows the same numbering system as does the Code, in order to facilitate reference from one to the other.

Government Purchasing and Competition. By Dickson Reck. December 1954. University of California Press, Berkeley 4, California. $4.00.

This study is based on the idea that governments and private large-scale buyers can make their purchasing more effective by using better methods of specifying products, inviting bids, evaluating quality and price, and awarding contracts. Because the book appraises the effectiveness of the methods employed by the federal government to purchase civilian goods in competition with private buyers, it is of direct interest not only to state- and local-government purchasing officials and industrial purchasing agents, but to industrial purchasing agents as well.

The author describes the contracting methods, centralized purchasing programs, and methods of product specification and quality evaluation used by the government, and shows how these policies and methods work in contracting for specific products. The products (each of which presents a typical purchasing problem) include paint, paper products, canned foods, dry batteries, electric lamps, electric fans, carpets and rugs, steel filing cabinets and desks, passenger automobiles, wood furniture, tires, cement, business machines, repair parts, breakfast cereals, and pharmaceutical preparations.

The 37 tables and 13 charts include comparisons of prices paid by the government with those paid by other large-quantity buyers. The author suggests many possible improvements of government buying, some of considerable importance to non-governmental purchasers.

The Strange Case of the Round Manhole Covers. By Thomas D. Jolly. Stories About Standards. No. 1 in a Series. American Standards Association, 70 E. 45 Street, New York 17, N.Y. No Charge.

The story of what happened when Alcoa started an item-by-item study of the materials in its stores, how it saved money by standardizing, and what it found when it inquired why one of its plants was using nonstandard manhole covers.

A Long Labor of Love. Stories About Standards. No. 2 in a series. March 1955. 4 x 7½. 12 pp. American Standards Association. No Charge.

How Thomas Hollis Wiggin started a standardization job at the age of 57 that took a quarter of a century to complete, and how he brought it to a successful conclusion. This is the story of Sectional Committee A21 on cast-iron pipe.

1954 SAE Handbook. New and revised. 1954. 1096 pp. Society of Automotive Engineers, Inc, 29 West 39th Street, New York 18, N. Y. $20.00

Contains three classes of reports: (1) SAE Standards based on sound, established engineering practice; (2) SAE Recommended Practices, which are recommendations based on sound engineering principles and are intended as guides toward standard engineering practice; (3) SAE General Information Reports, which present data useful to SAE Handbook users. Many of the SAE standards are approved American Standards.

Heating, Ventilating, Air Conditioning Guide, 1955. Vol 33. 1,680 pp. American Society of Heating and Air-Conditioning Engineers, Inc. 62 Worth Street, New York 13, N.Y. $12.00.

Contains a technical data section of reference material on the design and specification of heating, ventilating, and air conditioning systems based on the Society's Transactions, investigations of the research laboratory, and practice of members of the Society. Also contains a manufacturers' Catalog Data Section of information concerning modern equipment and complete indexes to both the technical data and catalog data sections.

A number of the chapters have been rewritten since the last edition; for example, those dealing with behavior of moisture in its transfer through building construction, design of gravity and forced warm air systems, district heating, and corrosion and scale prevention in equipment and systems. A new chapter outlines and emphasizes factors which affect the design of schoolhouse heating and ventilating systems. Information on high temperature water systems is introduced for the first time.

The Plastics Engineering Handbook (Reinhold Publishing Corporation, 430 Park Avenue, New York 22, N.Y.) 1954 edition. 850 pp. The Society of the Plastics Industry, Inc, 67 West 44th Street, New York 36, N. Y. $15.00

Five main sections cover Materials and Processes, Design, Finishing and Assembly, Testing, and SPI Standards. The expanded chapter on Standards for Tolerances on Molded Articles now offers 31 thermosetting and thermoplastic materials.

AMERICAN SOCIETY FOR TESTING MATERIALS
1916 Race Street
Philadelphia 3, Pa.

1954 Supplements to Book of ASTM Standards. March 1955. 7 parts, heavy paper covers, $3.50 per part, $24.50 per set.

The 1954 Supplements, issued in seven parts, give in their latest form 415 specifications, tests, and definitions which either were issued for the first time in 1954 or were revised since their appearance in the 1952 Book or the 1953 Supplements. Together with the 1952 *Book of ASTM Standards* and the 1953 *Supplements,* they give in their latest form all ASTM specifications, tests, definitions, and other standards except the chemical analysis of metals. The seven parts are:

Part 1. Ferrous Metals (608 pages). Includes 89 standards.

Part 2. Non-Ferrous Metals (444 pages). Includes 81 standards.

Part 3. Cement, Concrete, Ceramics, Thermal Insulation, Road Materials, Waterproofing, Soils (416 pages). Includes 77 standards.

Part 4. Paint, Naval Stores, Wood, Cellulose, Wax Polishes, Sandwich and Building Constructions, Fire Tests (160 pages). Includes 28 standards.

Part 5. Fuels, Petroleum, Aromatic Hydrocarbons, Engine Antifreezes (308 pages). Includes 36 standards.

Part 6. Rubber, Plastics, Electrical Insulation (532 pages). Includes 66 standards.

Part 7. Textiles, Soap, Water, Paper, Adhesives, Shipping Containers (296 pages). Includes 38 standards.

Official Visual Standards for Determining Corrosiveness of Petroleum Products. With ASTM Method D 130. Packed in individual cartons. $25.00 per set.

ASTM Copper Strip Corrosion Standards are now available for use with Method D 130 in determining the corrosiveness of automotive gasoline, aircraft engine fuels, farm tractor fuel, cleaners (Stoddard) solvent, Diesel fuel, fuel oil (distillate) and certain other petroleum products. In Method D 130 a polished copper strip is immersed at a definite temperature for a definite time in a sample of the material being tested. The copper strip is then washed and compared and evaluated with the Reference ASTM Copper Strip Corrosion Standards.

The reference standards comprise thirteen various colored strips produced by six-color lithograph on aluminum, arranged according to increasing severity of attack. A marginal table lists the number and description of the reference strips according to Method D 130. Instructions for use are on the reverse side.

Directory of Commercial and College Testing Laboratories. 1955. Paper cover, 8 x 10½, 48 pp. $1.00

Successor to the directory published in 1947 by the U. S. Department of Commerce, National Bureau of Standards. Lists the locations of testing laboratories equipped and prepared to undertake testing on a commercial or fee basis. Gives information concerning 278 commercial testing laboratories and their 151 branches or offices. Also lists laboratories of 86 colleges that are prepared to do testing under certain conditions. Research and consulting laboratories are not listed unless they also are engaged in testing on a commercial basis.

ASTM Standards on Electrical Insulating Materials (with related information). 1955. Heavy paper cover, 6 x 9, 660 pp. $5.50.

A compilation of the latest ASTM methods of testing and specifications for electrical insulating materials prepared by ASTM Committee D-9. Includes 60 methods of test, 17 specifications, 3 recommended practices, and a list of definitions. Thirty-three are new or have been revised since. Includes revisions accepted as late as February 3, 1955. Appendices discuss significance of tests of electrical insulating materials; recommendations for writing statements as to usefulness of tests of electrical insulating materials; and two proposed methods of test—one for dielectric constant and dissipation factor of aviation fuels and one for pasted mica used in electrical insulation.

1954 Supplement to the Metal Cleaning Bibliographical Abstracts. (ASTM Special Technical Publication No. 90-C). Heavy paper cover, 6½ x 9, 48 pp. $1.50. In combination with ASTM STP 90B. $5.25.

Brings up to date the bibliography of published data on metal cleaning. New references total 227. The 1953 edition (ASTM STP No. 90-B) was a combined publication of all references from 1842 to 1951. References are arranged by year and secondly by author or by journal. Wherever possible the original articles have been abstracted.

ASTM Standards on Paint, Varnish, Lacquer, and Related Products. 1955. Heavy paper cover, 6 x 9, 868 pp. $6.00

The ninth edition of the compilation of ASTM Standards on this subject, gives the latest edition of more than 200 specifications, tests, and definitions issued by the American Society for Testing Materials.

ASTM Committee D-1 on Paint, Varnish, Lacquer, and Related Products works in cooperation with the Federation of Paint and Varnish Production Clubs. Some 60 standards in this publication have been approved as Federation Standards.

Proposed specifications are published in draft form for the purpose of soliciting comments.

ASTM Standards on Rubber Products. Heavy paper cover, 6 x 9. 684 pp. $5.50.

Includes all methods of test and specifications (more than 110) developed through the work of ASTM Committee D-11 on Rubber and Rubber-Like Materials.

International Recommendations Just Published

IEC Recommendations Regarding the Colour of Push-Buttons. Publication No. 73. 1955. International Electrotechnical Commission, Geneva, Switzerland. (Available from the American Standards Association, 70 E. 45 Street, New York 17, N.Y. 60¢)

The colors to be used in identifying push-button controls for stopping and starting electric motors are recommended. These are recommendations to the national standards bodies in the various countries as a help in preparing their national standards.

These recommendations are not intended to discourage the use of identification other than color.

In general, red is recommended for the push-button used for stopping a motor or opening a circuit, and green for the button used in starting a motor. Provision is also made for a number of other conditions, for example, where buttons are used for forward and reverse, or for full speed and reduced speed. In such a case, red should be used only for the stop button.

International Code for Abbreviation of Titles of Periodicals, ISO R 4. International Organization for Standardization, Geneva, Switzerland. Copies available from American Standards Asssociation, 70 East 45 Street, New York 17, N.Y. 50 cents.

Librarians and publishers can use this international code as a guide in abbreviating titles of periodicals. It was prepared by ISO Technical Committee 46, Documentation, on which 19 countries are represented, and has been approved and published by the International Organization for Standardization. The American Standards Association is the USA member of ISO.

Intended as a recommendation to the national standards organizations of the various countries, the code offers a series of principles as a guide. Preparation of the abbreviations is left to the standards groups in each country.

As explained in the code, "The rules in these recommendations are to be regarded as indicating the utmost limits permitted for abbreviations; these rules may be modified to suit national purposes within those limits."

Standardization in the domain of Documentation. Report prepared by Technical Committee ISO/TC 46, Documentation, of the International Organization for Standardization (ISO) and published in collaboration with UNESCO. The Hague. 1954. Available from the American Standards Association, 70 E. 45 Street, New York 17, N.Y. No Charge.

Contains a discussion of general principles and procedure in international standardization and of standardization in relation to documentation. It also contains the text of a number of recommendations proposed for international adoption. These include the ISO Recommendation, International Code for the Abbreviation of Titles of Periodicals; the draft recommendation on layout of periodicals; and the draft recommendations on bibliographical citations and bibliographical references.

AMERICAN STANDARDS

Status as of May 2, 1955

Building

American Standard Published—

Gypsum Wallboard, Specifications for, ASTM C36-54; ASA A69.1-1955 (Revision of ASTM C36-52; ASA A69.1-1952) $0.30
Sponsor: American Society for Testing Materials

Composition, strength, dimension, and finish requirements for gypsum board designed to be used without the addition of plaster for walls, ceilings, or partitions and to afford a surface suitable to receive decoration.

In Standards Board—

Building Code Requirements for Minimum Design Loads in Buildings and Other Structures, A58.1 (Revision of A58.1-1945)
Sponsor: National Bureau of Standards

Chemical Industry

New Project Initiated—

Centrifugal Pumps for Chemical Industry Use
Requested by: Chemical Industry Advisory Board

Consumer Goods

In Standards Board—

Computing Food-storage Volume and Shelf Area of Automatic Household Refrigerators, Method of, B38.1 (Revision of B38.1-1944)
Sponsors: American Society of Refrigerating Engineers; U.S. Department of Agriculture, Home Economics Research Branch

Electrical

American Standards Published—

Dry Cells and Batteries, Specifications for, C18.1-1954 (Revision of C18.1-1947) $0.25
Sponsor: National Bureau of Standards

Instrument Transformers, Requirements, Terminology, and Test Code for, C57.13-1954 $2.50
Sponsor: Electrical Standards Board

American Standard Approved—

Asbestos, Asbestos-Varnished Cloth, and Asbestos - Thermoplastic Insulated Wires and Cables, C8.36-1955 (NEMA WC1-1955)
Sponsor: Electrical Standards Board

In Standards Board—

Terms for Audio Techniques, Definitions of, ASA C16.24; 54IRE3.S1
Sponsor: Institute of Radio Engineers

Wet Process Porcelain Insulators, Suspension Type, C29.2 (EEI TDJ-52; NEMA 140-1952)

Wet Process Porcelain Insulators, Spool Type, C29.3 (EEI TDJ-53; NEMA 141-1952)

Wet Process Porcelain Insulators, Strain Type, C29.4 (EEI TDJ-54; NEMA 142-1952)

Wet Process Porcelain Insulators, Low- and Medium-Voltage Pin Type, C29.5 (EEI TDJ-55; NEMA 143-1952)

Wet Process Porcelain Insulators, High-Voltage Pin Type, C29.6 (EEI TDJ-56; NEMA 144-1952)

Wet Process Porcelain Insulators, High-Voltage Line-post Type, C29.7 (EEI TDJ-57; NEMA 145-1952)
Sponsor: Electrical Standards Board

Terms of Electron Tubes, Definitions of, C60.9

Terms of Magnetrons, Definitions of, C60.10

Terms of Gas-Filled Radiation Counter Tubes, Definitions of, C60.12
Sponsor: Joint Electron Tube Engineering Council

Project Initiated—

Terminology for Automatic Controls, C85
Sponsor: American Society of Mechanical Engineers

Materials and Testing

American Standard Published—

Non-spark Conductive Oxychloride Composition Flooring and Its Installation, Specifications for, A88.9-1955 $0.35
Sponsor: American Society for Testing Materials; National Bureau of Standards

Requirements for conditioning working areas and preparation of subfloors, and specifications for materials and their proportioning and mixing for oxychloride composition floors for use in hospital operating rooms. Method of application, thickness, protection, and methods of test.

In Standards Board—

Nickel Seamless Pipe and Tubing, Specifications for, ASTM B161-49T; H34.1

Nickel-Copper Alloy Seamless Pipe and Tubing, Specifications for, ASTM B165-49T; ASA H34.2

Nickel - Chromium - Iron Alloy Seamless Pipe and Tubing, ASTM B167-49T; ASA H34.3

Hardness Conversion Table for Cartridge Brass (Relationship between Diamond Pyramid Hardness, Rockwell Hardness, and Brinell Hardness), ASTM E33-42; ASA Z76.1

Hardness Conversion Table for Steel (Relationship between Diamond Pyramid Hardness, Rockwell Hardness, and Brinell Hardness), ASTM E48-43T; ASA Z76.2

Hardness Conversion Table for Nickel and High-Nickel Alloys (Relationship between Diamond Pyramid Hardness, Brinell Hardness, and Rockwell Hardness), ASTM E93-52; ASA Z76.3

Analysis of Natural Gases for the Volumetric-Chemical Method, Method for, ASTM D1136-53; ASA Z77.1

Analysis of Natural Gases and Related Types of Gaseous Mixtures by the Mass Spectrometer, Method for, ASTM D1137-53; ASA Z77.2

Test for Water Vapor Content of Gaseous Fuels by Measurement of Dew-Point Temperature, Method of, ASTM D1142-53; ASA Z77.3

Sampling Natural Gas, Method of, ASTM D1145-53; ASA Z77.4
Sponsor: American Society for Testing Materials

Mechanical

American Standards Published—

Square and Hexagon Bolts and Nuts, B18.2-1955 (Revision of B18.2-1952) $2.00
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Gas Transmission and Distribution Piping Systems, B31.1.8-1955 (Revision of B31.1.8-1952) $2.50
Sponsor: American Society of Mechanical Engineers

In Standards Board—

Deep Well Vertical Turbine Pumps, Specifications for, B58.1
Sponsor: American Water Works Association

Withdrawal Being Considered—

Rotary Cone Valves, B61
Requested by: American Society of Mechanical Engineers

Mining

Standard Submitted—

Recommended Practice for Drainage of Coal Mines, M6 (Revision of M6-1931)
Sponsor: American Mining Congress

Petroleum Products and Lubricants

In Board of Review—

Test for Distillation of Gasoline, Naphtha, Kerosene, and Similar Petroleum Products, Method of, ASTM D86-54; ASA Z11.10 (Revision of ASTM D86-53; ASA Z11.10-1953)

Test for Distillation of Natural Gasoline, Method of, ASTM D216-54; ASA Z11.11 (Revision of ASTM D216-53; ASA Z11.11-1953)

Test for Distillation of Gas Oil and Similar Distillate Fuel Oils, Method of, ASTM D158-54; ASA Z11.26 (Revision of ASTM D158-53; ASA Z11.26-1953)

Test for API Gravity of Petroleum and Its Products, Method of (Hydrometer Method), ASTM D287-54; ASA Z11.31 (Revision of ASTM D287-52; ASA Z11.31-1952)

Test for Distillation of Crude Petroleum, Method of, ASTM D285-54T; ASA Z11.32 (Revision of ASTM D285-52; ASA Z11.32-1952)

Test for Neutralization Value (Acid and Base Numbers) by Potentiometric Titration, Method of, ASTM D664-54; ASA Z11.59 (Revision of ASTM D664-52; ASA Z11.59-1952)

Test for Saponification Number of Petroleum Products by Potentiometric Titration, Method of, ASTM D939-54; ASA Z11.67 (Revision of ASTM D939-52; ASA Z11.67-1952)

Test for Specific Gravity of Petroleum and Its Products (Hydrometer Method), Method of, ASTM D1298-54; ASA Z11.84

Sponsor: American Society for Testing Materials

Photography

American Standards Approved—

Photographic Grade Hydroquinone, Specification for, PH4.126-1955 (Revision of Z38.8.126-1949)

Photographic Grade Potassium Bromide, Specification for, PH4.200-1955 (Revision of Z38.8.200-1949)

Photographic Grade Benzotriazole, Specifications for, PH4.204-1955 (Revision of Z38.8.204-1948)

Sponsor: Photographic Standards Board

In Board of Review—

16mm Sound-Focusing Test Film, PH22.42 (Revision of Z22.42-1946)

16mm 400-Cycle Signal-Level Test Film, PH22.45 (Revision of Z22.45-1946)

16mm Buzz-Track Test Film, PH22.57 (Revision of Z22.57-1947)

16mm Motion Picture Projector for Use with Monochrome Television Film Chains Operating on Full-Storage Basis, PH22.91

35mm Magnetic Azimuth Alignment Test Film, PH22.99

Sponsor: Society of Motion Picture and Television Engineers

In Standards Board—

Focal Length of Lenses: Markings, PH3.13 (Revision of Z38.4.4-1942)

Distance Scales for Focusing Camera Lenses, PH3.20 (Revision of Z38.4.3-1947 and Z38.4.13-1948)

Sponsor: Photographic Standards Board

Reaffirmation Requested—

Sound Focusing Test Film for 35mm Motion Picture Sound Reproducers (Service Type), PH22.61 (Reaffirmation of Z22.61-1949)

Buzz-Track Test Film for 35mm Motion Picture Sound Reproducers, PH22.68 (Reaffirmation of Z22.68-1949)

Requested by: Society of Motion Picture and Television Engineers

Pipe and Fittings

New Project Requested—

Plastic Pipe

Requested by: Chemical Industry Advisory Board

Rubber Industry

American Standard Published—

Sample Preparation for Physical Testing of Rubber Products, Method of, ASTM D15-54T; ASA J1.1-1955 (Revision of ASTM D15-52T; ASA J1.1-1953)

Sponsor: American Society for Testing Materials

Compounding and mixing of standard compounds, utilizing standard ingredients; preparation of samples for tension testing from mixed batches of rubber compounds; and preparation of test specimen from rubber sample.

Safety

In Board of Review—

Prevention of Dust Explosions in Flour and Feed Mills, Code for, Z12.3 (Revision of Z12.3-1953)

Prevention of Dust Explosions in Terminal Grain Elevators, Code for, Z12.4 (Revision of Z12.4-1953)

Prevention of Dust Ignitions in Country Grain Elevators, Code for, Z12.13 (Revision of Z12.13-1953)

Sponsor: National Fire Protection Association

In Standards Board—

Safety Code for Elevators, Dumbwaiters, and Escalators, A17.1 (Revision of A17.1-1937)

Sponsors: American Institute of Architects; National Bureau of Standards; American Society of Mechanical Engineers

New Projects Requested—

Auto Seat Safety Belts

Requested by: Association of Casualty and Surety Companies, Accident Prevention Department; Industrial Safety Equipment Association

Safety Code for Lawn Mowers

Requested by: Lawn Mower Institute

Your Nominations Are Requested

for the Howard Coonley Medal

for the Standards Medal

ALL members of the American Standards Association are invited to send in nominations for the 1955 recipients of the Howard Coonley Medal and the Standards Medal. Nominations should be in the hands of the Managing Director of the Association before June 30, 1955.

The Howard Coonley Medal is awarded each year to an executive who by his practice and preachments has furthered the national economy through voluntary standardization. Recipients have been The Honorable Herbert Hoover, Mr Howard Coonley, Mr William Batt, Senator Ralph E. Flanders, and Mr Thomas D. Jolly.

This gold medal was established by the ASA Board of Directors in 1950 through the support of certain industrial organizations. It was named in honor of Mr Coonley, who during his 22 years as member of ASA's Board of Directors had become recognized both nationally and internationally for his leadership in standardization.

The Standards Medal, also a gold medal, is an award to an individual who has shown leadership in the development and application of voluntary standards. It was established in 1951, using Association funds. It has been awarded to such well-known leaders in standardization as Frank O. Hoagland, Perry L. Houser, the late Dr P. G. Agnew, and Dr John Gaillard.

Nominations should be submitted in quadruplicate on plain paper without indication as to the source of the nomination. Each nomination should be accompanied by a letter of transmittal.

In order to provide complete and comparable data, forms can be obtained from ASA for filing nominations.

Coordination of Dimensions of Building Materials and Equipment, A62 —

Sponsors: American Institute of Architects; the Producers Council; Associated General Contractors of America; National Association of Home Builders.

Influential support is being given modular dimensioning for home building through a series of round tables sponsored by *House & Home*, a Luce publication. The magazine is working in collaboration with the American Standards Association and the Research Institute of the National Association of Home Builders.

"Standard parts dimensioned to fit offer the No. 1 hope of lower costs" was the theme of the first round table, New York, February 24 and 25. The second, April 20-21, in Chicago, covered exterior openings, including doors, windows, window walls, and garage doors. Others are scheduled as follows:

May 26-27: Bathrooms, including fixtures, plumbing, and wall panels

June 7-8: Kitchens

June 28-29: Heating, cooling, and other mechanical equipment

July 19-20: Wall sections (especially those incorporating doors and windows)

August 9-10: Built-ins and storage walls

Emphasized at the first round table were the following:

- The greatest hope of evolutionary cost reduction lies in the greatly increased use of standard parts dimensioned to fit together
- Now if ever is the time to set these standard dimensions and use them to get lower costs for higher quality.
- First we must have a standard terminology of measurement
- All standard dimensions should conform to the 4-in. module
- Ceiling height is the most important of dimensions to standardize
- Successive round tables should explore specific standardization problems
- Bathroom standardization should focus on two objectives: (1) How can we dimension precast or prebuilt plumbing assemblies to meet the needs of small houses? (2) How can we dimension bathroom wall components of tile, mosaic tile, porcelain enamel, plastic, glass fiber, or other materials that can be installed with a minimum of onsite labor, preferably by carpenters and directly on the studs?
- Coordination of exterior wall openings is urgently needed.
- The appliance makers should help develop uniform kitchen standards.
- Three basic rules:

(1) In fixing standard dimensions first consideration should be given to the requirements of good architecture, including both good design and good livability.

(2) Nothing in the recommendations should have the effect of freezing design, blocking the introduction of better construction methods, or making all houses alike.

(3) Any dimensional standardization must allow adequate tolerances for field installation, taking into account the material likely to be used and the capacity of the workmen.

P. I. Prentice, editor and publisher of *House & Home*, was moderator of the panel. Those taking part represented the American Standards Association; the National Association of Home Builders Research Institute; the American Institute of Architects; the Producers Council; the Federal Housing Administration; the Veterans Administration; the Building Research Institute; the Lumber Dealers Research Council; the Small Homes Council; the Southwest Research Institute; the Prefabricated Home Manufacturers Institute; the National Lumber Manufacturers Association; the Structural Clay Products Institute, and a number of individual building engineers.

At House & Home's round table—(left to right) Vice Admiral G. F. Hussey, Jr, ASA; Neil A. Connor (Federal Housing Administration); Charles Hopkins (Veterans Administration); Paul Cadwallader (Lumber Dealers Research Council); James T. Lendrum (Small Homes Council)

Walter Daran

Drainage of Coal Mines, M6 —

Sponsor: U.S. Bureau of Mines.

The Bureau has just accepted sponsorship of this sectional committee. A draft standard is now being considered by the committee.

Library Practice and Documentation, Z39 —

Sponsor: Council of National Library Associations.

Four subcommittees to develop standards as a guide for publishers and librarians were authorized by the committee at its meeting in New York April 29.

The subcommittees will work on standard guides for abbreviating titles of periodicals; reference data included in periodicals; bibliographical citations, references, abstracts, and synopses; and indexes for periodicals.

Representatives of publishers as well as national associations of librarians were present at the April 29 meeting. A great deal of work is already being done by individual organizations on a number of subjects to be taken up by the new subcommittees, it was pointed out. Part of the work of the subcommittees will be to contact these organizations and correlate the work now underway in order to bring about nationwide agreement on standard practices to be recommended.

Committee Z39 also presents the USA viewpoint on international recommendations proposed by the technical committee on documentation of the International Organization for Standardization. The chairmen of the subcommittees to be appointed and the chairman of Committee Z39 were named as an international subcommittee to expedite action on these international recommendations.

It was reported that commercial specifications for Class A binding prepared by the Binding Committee of the American Library Association and the Library Binding Institute are in draft form as a proposed Commercial Standard. The preliminary draft is now being studied by the groups concerned.

Officers of Sectional Committee Z39 are Ralph H. Phelps, Engineering Societies Library, *Chairman;* Lawrence Leavey, Catholic Library Associations, *Vice-Chairman;* Robert E. Kingery, New York Public Library, *Secretary.*

The organizations represented at the April 29 meeting were: American Book Publishers' Council; American Library Association; American Library Association, Division of Cataloging and Classification; American Text Book Publishers' Institute; American Association of Library Schools; Council of National Library Associations; Book Manufacturers Institute; Library Binding Institute; Magazine Publishers Association; National Research Council; Special Libraries Association; Mellon Institute.

Plastics, ISO TC 61 —

Secretariat: American Standards Association.

At the last meeting of TC 61, the committee approved a number of draft ISO Recommendations which were incorporated in the minutes of the meeting to give all members an opportunity for final comment. Approval of the minutes will give final approval to these draft recommendations. They will then be distributed to all members of the International Organization for Standardization for vote. They cover determination of percentage of acetone soluble matter of phenolic mouldings; determination of apparent density of moulding material which can be poured from a funnel; determination of apparent density of moulding material which cannot be poured from a funnel; determination of water absorption of plastics (conventional method); test method on temperature of deflection under load.

Seven draft proposals also have been circulated for comment and will be considered at the next meeting of the committee in July. They cover determination of flexural properties of rigid plastics; standard conditioning of plastic materials prior to testing; standard laboratory atmospheres for testing plastic materials; determination of percentage methanol soluble matter of polystyrene; determination of free ammonia in phenol formaldehyde mouldings (semi-quantitative method); determination of boiling water absorption of plastics (conventional method); determination of free phenols in phenol formaldehyde mouldings.

E. E. Ziegler, Dow Chemical Company, Midland, Michigan, is now leader of Working Group 7 on Standard Specimens and Their Preparation. The Belgian standards body is taking the leadership of Working Group 4 on Thermal Properties; and Germany will have the leadership of Working Group 2 on Mechanical Strength Properties.

Robert Burns, National Research Council, is heading the USA delegation to the July meetings of Technical Committee 61 at Paris. Dr Gordon M. Kline, National Bureau of Standards, Washington, D.C. will serve as chairman of the meeting.

Copper and Copper Alloys, ISO/TC 26 —

Secretariat: American Standards Association.

The organization meeting of this technical committee is being held in Stockholm June 13 and 14. Scope of the project covers "All questions relating to the standardization of copper and copper base alloys; i.e., metallic compositions in which copper is the principal element."

A number of ASTM standards are being considered as a basis for international agreement. They cover: Standard classification of coppers (ASTM B 224-52); Classification of Cast Copper-Base Alloys (ASTM B 119-45); Method of Test for Expansion (Pin Test) of Copper and Copper Alloy Tubing (ASTM B 153-47); and Method of Mercurous Nitrate Test for Copper and Copper Alloys (ASTM B 154-51).

Lamps and Related Equipment —

E. H. Salter, Electrical Testing Laboratories, is chairman of a recently appointed Advisory Committee for international standardization on lamps and related equipment. The subcommittee was authorized by R. C. Sogge, President of the U.S. National Committee of the International Electrotechnical Commission. Mr Salter will also serve as technical advisor for auxiliaries for fluorescent lighting. This is in connection with the International Electrotechnical Commission's Technical Committee 34C.

B. R. Buus, General Electric Company, is vice-chairman of the Advisory Committee and will serve as technical advisor on lamps (IEC Technical Committee 34A).

H. H. Watson, General Electric Company, is second vice-chairman and technical advisor for lamp caps and holders (IEC/TC34B).

This committee will serve as a clearinghouse for all activities on international standardization in the field of lamps and related equipment. It will coordinate the USA viewpoint as expressed through Sectional Committee C78 on dimensional and electrical characteristics of electric discharge lamps; C81, on lamp holders and bases; and C82, fluorescent lamp ballasts. Members of four subgroups have been named, covering lamps; lamp caps and holders; starters; and ballasts.

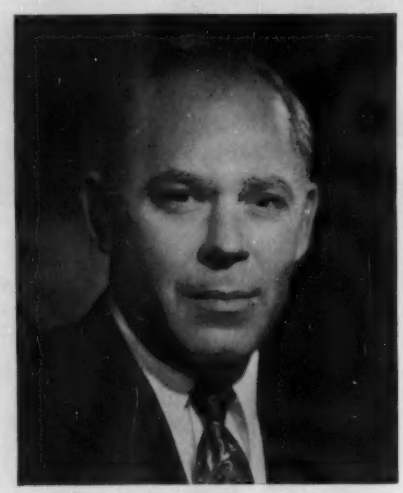
Traffic Standards Board Plans for Greater Activity

Greater activity is visualized by the Highway Traffic Standards Board.

Officers of the Board are Gavin Laurie, manager, Automotive Division, Transportation Department, Atlantic Refining Company, Philadelphia, chairman, and G. D. Sontheimer, director of the Department of Safety, American Trucking Associations, Inc, vice-chairman.

Mr Laurie has been with the Atlantic Refining Company since 1926. The list of organizations with which he has worked reads like a roster of the nation's outstanding groups concerned with highway and transportation problems in the safety field, civil defense, trucking and transportation, the petroleum industry, and the government. He is a member of committees of the petroleum industry dealing with highways, laws and regulations, bulk hauling, taxes, and regulatory problems affecting automotive transportation. He is also a member of the Street and Highway Transport Section of the Defense Transport Administration, and regional chief of the Highway Truck Branch of the Federal Civil Defense Administration. This includes Pennsylvania, Ohio, Kentucky, Virginia, West Virginia, Maryland, Delaware, and the District of Columbia.

Gavin Laurie



G. D. Sontheimer

As the Private Truck Council's representative on the National Research Council, he is a member of committees studying road tests and the economics of motor vehicle sizes.

Mr Laurie is chairman of the Highway Policies Committee of the Private Truck Council of America, and of the Traffic and Safety Committee of the Philadelphia Chapter, Pennsylvania Motor Truck Association. He is also a member of the U.S. Army's Transportation Corps Board and of the Corps' Technical Advisory Committee.

Mr Sontheimer's first experience in highway safety work was in organizing and teaching Missouri high schools while working with the State Highway Patrol. Later, while in charge of the Patrol's Division of Safety, he set up state-wide safety campaigns, handled summary and analyses of accident statistics for the state, and served as instructor in accident investigation and prevention, and first aid.

He became Safety Inspector for the Bureau of Motor Carriers, Interstate Commerce Commission, in 1943. In 1947 he joined the American Trucking Associations. During his service with ICC he wrote the Arkansas Public Service Commission's Safety Regulations and served as vice-chairman of the Arkansas State Safety Council.

Mr Sontheimer represents ATA in the White House Safety Conference, and on the National Advisory Committee on Fleet Supervisor Training. He is chairman of the Committee on Fleet Program Standards, which develops the training courses offered in 30 colleges and universities each year.

Mr Sontheimer often serves with local or state committees dealing with traffic safety.

Of the projects under the jurisdiction of the Highway Traffic Standards Board, action is now under way on the following:

A revision of the American Standard Manual on Uniform Traffic Control Devices for Streets and Highways, D6.1-1948, has been submitted to ASA for approval. (*Sponsors:* American Association of State Highway Officials; Institute of Traffic Engineers; National Committee on Uniform Traffic Laws and Ordinances.)

The sectional committee in charge is actively engaged in developing a revision of American Standard Inspection Requirements for Motor Vehicles, D7.1-1941. (*Sponsors:* American Association of Motor Vehicle Administrators; Association of Casualty & Surety Companies, Accident Prevention Department.)

The Association of American Railroads, sponsor for project D8, is circulating a draft revision of American Standard Railroad Highway Grade Crossing Protection, D8.1-1951, to the sectional committee for comment.

Reaffirmation of American Standard Pre-timed Fixed Cycle Traffic Signal Controls, D11.1-1943, will be considered by the sponsor within the next year. (*Sponsor:* Institute of Traffic Engineers.)

International Committees

(Continued from page 149)

Pulleys and Belts, Stockholm, June 13-16: E. G. Kimmich, Goodyear Tire and Rubber Company, Akron, Ohio.

Solid Minerals and Fuels, Stockholm, June 6-10: W. A. Selvig, United States Department of the Interior, Bureau of Mines, Pittsburgh; and Dr O. W. Rees, Illinois State Geological Survey, Urbana, Ill.

Screw Threads, Stockholm, June 6-8: Irvin H. Fullmer, National Bureau of Standards; E. W. Drescher, Hamilton Watch Company, Lancaster, Pa.

Vice Admiral George F. Hussey, Jr, USN (ret), managing director and secretary of the ASA, and J. W. McNair, assistant technical director of the Association will represent the U.S. at the ISO General Assembly.

Admiral Hussey will also attend two technical committee meetings of ISO, one on petroleum to be held in London, June 23, 24; and one on farm machinery, Brussels, July 11-14.

Mr McNair will represent the United States at a meeting on units and symbols for engineering, June 20-24, Copenhagen.

• • In connection with work on high-pressure standards, the National Bureau of Standards has devised a special insulating seal which solves the problem of leakage around electrical connections to high-pressure vessels. The Bureau announces that the seal is simply constructed of inexpensive materials and utilizes a sapphire bushing to obtain the necessary combination of high mechanical strength and good electrical insulating properties. Although developed specifically for use in calibrating high-pressure standards, the Bureau believes the high-pressure seal may prove useful in chemical, metallurgical, petroleum refining, and other industrial equipment where high-pressure operations are monitored or controlled electrically.

STANDARDS OUTLOOK

by LEO B. MOORE

TIME-ITIS RESOLVED

The inability of some people to handle their affairs in a sensible, reasonable manner in terms of time and effort is a disease that I call time-itis. If you suffer from this disease, ask yourself if you can remember what it was that made you so busy yesterday, last week, last month. As you go further into the past it becomes more difficult to identify the cause. If you will reflect, you will actually wonder why you could not have completed those things that now seem so much more important.

Is there any hope for a cure? Yes, but only if you have a deep-rooted determination to be cured. Stop to think of it this way. Every person may not be equal in intelligence or ambition or initiative but we are all equal in one respect. We each have time—twenty-four hours a day. The differences that develop among people stem from what each individual does with his twenty-four hours each day. What you do with your time and what I do with mine is to a large extent under our control—or should be. This is the crux of the cure of time-itis. We let the control of our time slip away from us and we must get it back. To do it requires determination.

This determination must become a religion with us until it becomes a way of life. We must plan our work, then work our plan. That isn't easy to do. But try this. Make a list of the things that keep you busy for a few days, just to get an idea of what you are doing. Then ask yourself—is this something that I should do or should someone else be doing it? Did I spend time on this while more pressing matters went unattended? Because of this, did I break a promise that I made to take care of something else? All this should begin to prove to you that you simply cannot do everything that you would like to do in your twenty-four hours. You must be discriminating.

Now you are really ready to plan your time. Start with one day, preferably one that you have most control over. Lay out the day in fifteen minute intervals and write down a schedule of what you wish to do and how long you wish to devote to each item. Live through that one day according to your pre-determined schedule. Fight every desire to change the schedule. Keep a record alongside your day of what you did and how long you took to do it. This sheet with your plan and your actual performance will begin to prove to you that it takes longer to do things than you realized.

As you continue to plan your days, your thinking becomes more realistic and so also do your promises. You are beginning to run your job and your life. You are able to include deliberately in your schedule those things that are pleasurable and meaningful for you and those around you. Your life becomes more satisfying. You are doing those things that you are best suited to do in a creditable manner because you have planned it that way. You are making your twenty-four hours count.

●

Mr Moore is Assistant Professor of Industrial Management at Massachusetts Institute of Technology where he teaches a full-term course in industrial standardization.

When You "Do-It-Yourself"

Are you sure the paint you use can't hurt your children

American Standard
Z66.1-1955

Specifications to Minimize Hazards to Children from Residual Surface Coating Materials

(*Sponsor:* American Academy of Pediatricians)

- ***Tells how much lead is safe***
- ***Restricts use of compounds of antimony, arsenic, mercury, selenium, or barium in paint***
- ***For furniture, toys, window sills, and other spots that babies sometimes chew when teething***

Dr George M. Wheatley (vice-president, Metropolitan Life Insurance Company), chairman of Committee Z66, warns: "Lead poisoning is particularly dangerous in children because it develops gradually and signs of illness may not be clear-cut until intoxication is severe. The early symptoms, such as loss of appetite, pallor and irritability, are characteristic of a number of other disorders common in children. This puts even more emphasis on prevention through selection of safe paints, supervision of small children to discourage 'sampling' foreign substances of all kinds, and early medical attention for any signs of illness."

LOOK FOR THE LABEL

Coating materials that comply with this standard may be marked: "Conforms to American Standard Z66.1-1955, for use on surfaces which might be chewed by children."

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Copies of American Standard Z66.1-1955 can be obtained from the American Standards Association at 35 cents each. Quantity prices on request.

American Standards Association
70 East 45 Street—New York 17, N. Y.